

**AMERICAN SOCIETY FOR ENGINEERING EDUCATION  
1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
1994 NAVY-ASEE SABBATICAL LEAVE PROGRAM**

**RERESEARCH GRANTS: N00014-90-J-1422 & N00014-94-1-0515  
CONTRACT NUMBER: N00014-94-C-0043  
ANNUAL REPORT**

**Prepared By: W.T. Cluverius  
Junior Program Manager  
American Society for Engineering Education**

**Submitted By: Tim Turner  
Manager, Projects  
American Society for Engineering Education**



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Date of Report: January, 1995

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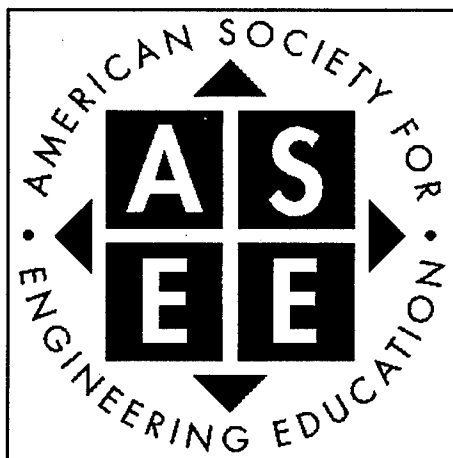
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AMERICAN SOCIETY FOR ENGINEERING EDUCATION  
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Date of Report: January, 1995

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## **Introduction**

The American Society for Engineering Education (ASEE) has administered the Navy-ASEE Summer Faculty Research Program since 1979. This program, through a series of grants from the Office of Naval Research, provides funding for university and college faculty members to conduct meaningful research at United States Navy Research and Development Centers during the summer. In October of 1990 the program was modified to allow university and college faculty members to conduct research at Navy R&D Centers while on sabbatical leave. Additionally, the program has also allowed graduate students to accompany participating faculty members.

During the summer of 1994, 168 engineering and science faculty members from universities and colleges from 37 states, the District of Columbia and Puerto Rico conducted research at 17 Navy Research and Development Centers. This brings the number of participants since the program began in 1979 to over 1,600. There were six faculty members who received support from the Sabbatical Leave Program in calendar year 1994. Additionally, there are two faculty members scheduled to begin tenure as Sabbatical Leave participants in early 1995. To date, 23 university faculty members have successfully completed their Sabbatical Leave appointments.

## **Grant History**

Currently, ASEE administers the Navy-ASEE Summer Faculty Research Program and the Sabbatical Leave Program under three agreements with the Office of Naval Research. Grant # N00014-90-J-1422 began on April 1, 1990 and will expire on September 30, 1995. A new grant, N00014-94-1-0515, was awarded on March 1, 1994 and is scheduled to expire on September 30, 1996. Grant # N00014-94-1-0515 is for participant costs only. A contract, N00014-94-C-0043, was awarded for administration costs. This contract was awarded on April 1, 1994 and will expire on September 30, 1996.

## **Financial Statements**

The financial statement for the grant is *Attachment A*. This report is a comprehensive summary of all the expenses associated with the Navy-ASEE Summer Faculty Research Program in FY 1994. The statement includes summer participants, accompanying graduate students and sabbatical leave appointments. Additionally, the report includes a cumulative financial summary since the beginning of the grant period.

## **Participant Salaries & Stipend Levels**

An analysis of participant salaries and stipend level distribution by laboratory is *Attachment B*. This report shows the distribution of salaries earned by the participants at their home institutions. Of the 147 participants who responded to the evaluation questionnaire, the source for the salary information, 40 earned salaries in the \$60,000 - \$69,999 range.

Further, 33 of the participants earned salaries in the \$50,000 - \$59,999 range and 32 earned salaries in the \$40,000 - \$49,999 range. The remaining 42 respondents earned salaries in other ranges, as indicated in *Attachment B*.

The participant level analysis, included in *Attachment B*, shows that of the 167 participants, 90 received Senior level appointments, 66 received Fellow level appointments and the remaining 11 received Distinguished level appointments. The participants were paid via electronic transfer to their financial institutions. The amounts of the three stipend levels for the ten week period were as follows:

Fellow: \$11,500  
 Senior: \$14,000  
 Distinguished: \$16,500

### 1994 Application Booklet

The 1994 Navy-ASEE Summer Research Programs Announcement/Application Booklet is *Attachment C*. The Summer Programs Announcement/Application Booklet was mailed in mid-November to the following:

#### Senior College Faculty:

Astronomy . . . . .	2,452
Chemistry . . . . .	11,347
Geology/Earth Sciences . . . . .	4,275
Military Science . . . . .	1,681
Physics . . . . .	6,054
Biological Sciences . . . . .	4,279
Business Management . . . . .	2,755
Computer Science . . . . .	3,784
Health, Education, Medical Sciences . . . . .	3,317
Mathematics . . . . .	3,531
Social Sciences . . . . .	1,520

Engineering College & University Faculty Members . . . . .	39,536
(Including ASEE Members)	

National Council of University Research Administrators . . . . .	2,500
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Total . . . . .	87,031
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## **1994 Navy-ASEE Summer Faculty Research Program Applicants & Participants**

By the January 15, 1994 deadline 634 faculty applications had been received. One hundred sixty eight (168) appointments were made, including one graduate student. The applications were sent to the laboratories as indicated by the applicants for review and recommendation. The designated Navy program administrator at each laboratory coordinated the review process and subsequently submitted a priority list to ASEE. Following a review panel at ASEE headquarter to determine stipend levels for the selected applicants, the ASEE program manager offered appointments by telephone. Upon receiving a verbal acceptance from the appointee, the ASEE program manager then sent a formal appointment letter. *Attachment D* is the appointment letter. Each appointee was required to sign and return to ASEE an acceptance of appointment form. *Attachment E* is the acceptance of appointment form. All applicants who were not selected to participate were notified by U.S. mail of the outcome of their application. The letter of rejection is *Attachment F*.

### **Applicant & Participant Distribution by Gender and Race**

The analysis of applicant and participant distribution by gender and race is *Attachment G*. Of the 634 applicants to 1994 Navy-ASEE Summer Faculty Research Program, 420 were categorized as "Male Other". One hundred and twelve were Asian males, 28 were African American males and 14 were Hispanic males. Native American males and Pacific Islander males were each only represented once. The female applicant analysis shows that 44 were categorized as "Female Other", 8 were African American, 5 were Asian and 1 was Native American. There were no Hispanic or Pacific Islander female applicants.

The participant distribution analysis shows that of the 168 participants, 112 were categorized as "Male Other". There were 29 Asian males, 9 African American males, 4 Hispanic males and 1 male Pacific Islander. There were no Native American male participants. Of the female participants, 9 were categorized as "Female Other". There were 3 African American females and 1 Asian female participant. There were no Hispanic, Native American or Pacific Islander female participants.

### **Applicant & Participant Distribution by Discipline and Laboratory**

The analysis of applicant and participant distribution by discipline and laboratory is *Attachment H*. Of the 634 applicants to the 1994 Navy-ASEE Summer Faculty Research Program, 294 were from the Engineering disciplines. Additionally, the Physical Sciences accounted for 130 applicants, 94 applicants came from Mathematics and Computer Science and 56 applications were received from the Behavioral Sciences. Thirty-two applications were received from the Life Sciences, 13 applications were received from the Business oriented disciplines, 9 applications were received from the Environmental Sciences and 6 applications were from the Social Sciences.

Of the 168 participants, 76 were from the Engineering disciplines. The Physical Sciences accounted for 39 participants and Mathematics and the Computer Sciences were represented by 19 participants. There were 16 participants from the Behavioral Sciences, 9 participants came from the Life Sciences disciplines, 5 came from the Social Sciences and 3 from the Environmental Sciences. There was 1 participant from the Business oriented disciplines.

### **Applicants & Participants from HBCU/MI**

As part of the ongoing effort to improve the number of underrepresented minorities in science and engineering, ASEE works to distinguish those faculty members who are from Historically Black Colleges and Universities and Minority Institutions (HBCU/MI). As per an agreement with the Office of Naval Research, ASEE works closely with a representative from Hampton University to improve promotion and outreach to faculty members at HBCU/MI's. The analysis of applicants and participants from HBCU/MI's is *Attachment I*.

Of the 634 applications received for the 1994 summer program, 100 came from professors at HBCU/MI's. Simply, this analysis shows that of the 100 applicants from HBCU/MI's, 60 of them received appointments. Additionally, the analysis shows the home institution of each applicant and participant and the Navy Laboratory to which they applied.

### **Participants by Department, University and State**

Simply, *Attachment J* is a listing of all the 1994 summer program participants and their department and university. *Attachment K* is a listing of all the 1994 summer program participants by university and state.

### **Evaluation Questionnaire**

As part of the completion requirements for the program, all participants are required to submit an Evaluation Questionnaire upon completion of their appointment. This questionnaire is designed to provide ASEE and the Navy with valuable statistical information regarding the program and the participants. Additionally, it provides the participants with an opportunity to offer their comments and criticisms. At the time of this report 151 of the 168 participants had submitted completed Evaluation Questionnaires. *Attachment L* is the Evaluation Questionnaire.

One hundred and fifty-one (100%) of the respondents agreed that they were engaged in research of importance to the mission of the laboratory and the U.S. Navy. One hundred percent (100%) of those who responded also agreed that they would be interested in maintaining a continuing research relationship with their peers at the Navy laboratories. Additionally, all respondents agreed that they would recommend this program to their faculty colleagues as a favorable means of advancing their professional development as researchers and teachers. *Attachment M* is the summary of the Evaluation Questionnaire responses.

## **1994 Navy-ASEE Sabbatical Leave Program**

The Navy-ASEE Sabbatical Leave Program provides faculty members an opportunity to conduct research initiated during the summer for a longer period of time or can provide university faculty an extended opportunity to conduct research of interest to both the Navy and faculty participants. Applications are accepted anytime during the year. ASEE will review the application to confirm that all of the appropriate information has been submitted and then send a copy to the designated R&D center of interest for their initial review to determine whether or not the Center can support such a project. If the Center indicates an interest in the applicant, the application and proposed research statement is sent to members of the ASEE Faculty Programs Committee for their review. ASEE is responsible for reviewing applications received for the Sabbatical Program to insure the proposed research meets the stated goals of the program and to determine the match between the proposed research and Navy colleague. Upon approval, the ASEE committee will send a summary of the review comments. The information regarding salary and retirement benefits provided by the institution is verified by ASEE staff and an estimation of cost for the proposed research is sent to the center. The center is asked to sign off on the cost estimate and then a verbal offer is made to the candidate. Upon his/her acceptance, funds are then due to ONR and the formal offer is processed.

The participants in the sabbatical program receive a monthly stipend making up the difference between their salary and the pay they receive while on sabbatical. In addition, participants will receive reimbursement for travel to and from the laboratory site and a relocation allowance for those who must relocate their residence during their sabbatical leave tenure. Sabbatical leave appointments are contingent on the availability of sabbatical leave positions. *Attachment N* is a summary of Sabbatical Leave Program Participants on tenure during 1994 and who are scheduled to begin tenure in early 1995.

## **ASEE Summer Faculty Program Committee**

On March 3, 1994 ASEE convened a panel to review the list of selections received from each laboratory. This panel was represented by members of the ASEE Summer Faculty Programs Committee, Navy personnel and university faculty members. As one of the requirements of the new research grant, ASEE is responsible to review and assign the level of each appointment for the summer faculty participants. *Attachment O* is a list of the Summer Programs Committee Members.

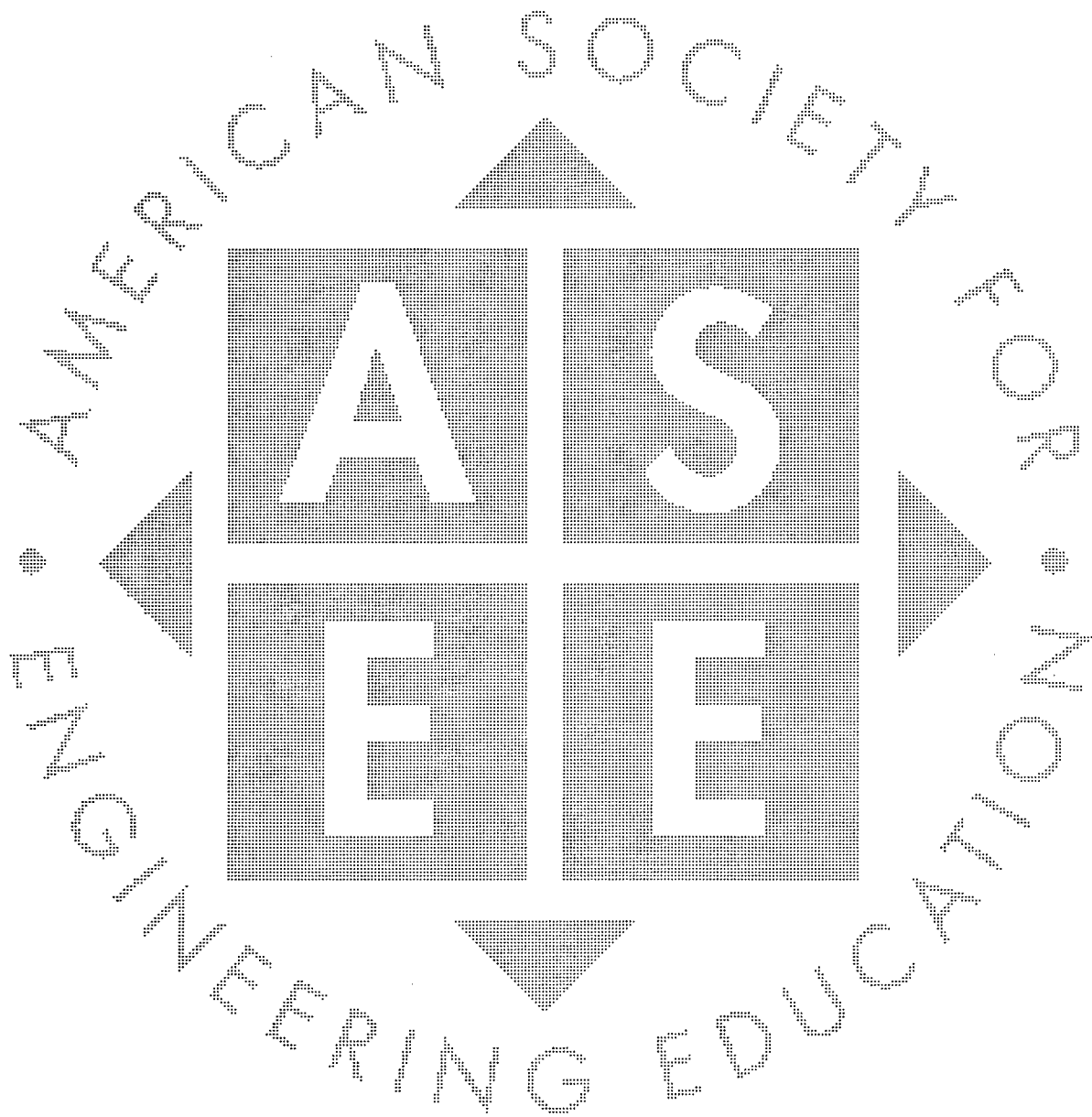
## **Conclusions and Recommendations**

The Navy-ASEE Summer Faculty Research Program continues to offer a unique research opportunity for the nation's university professorate. Each summer, since 1979, diverse groups of university faculty members have enjoyed conducting research at the participating Navy R&D centers. This program continues to enhance research interests and capabilities of faculty members and the establishment of continuing relations among the faculty participants



and Navy colleagues. Since 1979, ASEE has successfully managed this program which has provided engineering and science faculty from U.S. colleges and universities the opportunity to participate in research at Navy laboratories. For the past 30 years, ASEE has been involved in administering summer faculty research programs for various federal sponsors as part of its commitment to the professional development of its members as well as fulfilling its mission to improving engineering and science education. Programs such as the Navy Summer Faculty Research/Sabbatical Leave Program fit well into the stated mission of the Society.

# ATTACHMENT A



## Financial Statements

## AMERICAN SOCIETY FOR ENGINEERING EDUCATION

## INTERIM FINANCIAL REPORT

10/01/93-9/30/94

GRANT: N00014-90-J-1422

GRANT PERIOD: 4/1/90-9/30/95

GRANT AMOUNT: \$14,046,532

AMOUNT AVAILABLE: \$10,348,582.50

ASEE ACCOUNT # PR10

	1st QUARTER 01-Oct-93 31-Dec-93	2nd QUARTER 01-Jan-94 31-Mar-94	3rd QUARTER 01-Apr-94 30-Jun-94	4th QUARTER 01-Jul-94 30-Sep-94	TOTAL 01-Oct-93 30-Sep-94
<b>ADMINISTRATIVE EXPENSES:</b>					
SALARIES	\$10,687.11	\$4,831.35	\$1,010.35	\$0.00	\$16,528.81
TEMPORARY SALARIES	0.00	0.00	0.00	0.00	0.00
BENEFITS @ 30.08%	3,214.68	1,453.27	303.91	0.00	4,971.87
POSTAGE	855.75	550.36	4.30	33.04	1,443.45
POSTAGE 3RD CLASS	8,500.00	0.00	0.00	0.00	8,500.00
EXPRESS/COURIER	58.22	69.75	41.75	16.70	186.42
TELEPHONE	0.00	63.64	100.11	0.00	163.75
TOLLS/FAX	27.70	89.78	328.78	75.64	521.90
FREIGHT	234.50	0.00	0.00	0.00	234.50
ACCOUNTANTS	0.00	0.00	0.00	0.00	0.00
CONSULTANTS/HONORARIA	0.00	0.00	0.00	0.00	0.00
OTHER PROF. SERVICES	167.90	310.20	0.00	0.00	478.10
SUPPLIES	190.25	288.50	0.00	0.00	478.75
MACHINE MAINT./RENTAL	291.51	92.40	0.00	0.00	383.91
PRINTING	15,814.15	0.00	0.00	0.00	15,814.15
MAILING LABELS	3,280.08	0.00	0.00	0.00	3,280.08
TYPESETTING/DESIGN	0.00	0.00	0.00	0.00	0.00
PHOTOCOPYING	0.00	31.00	10.46	21.31	62.77
MAIL HOUSE CHARGES	0.00	1,322.68	0.00	0.00	1,322.68
COMMERCIAL ADS.	1,860.00	0.00	0.00	0.00	1,860.00
TRAVEL	0.00	405.02	0.00	0.00	405.02
COMMITTEE TRAVEL	0.00	1,118.91	1,194.00	0.00	2,312.91
MEALS/LODGING	0.00	451.00	0.00	0.00	451.00
DUES	0.00	0.00	900.00	0.00	900.00
TOTAL DIRECT EXPENSE	\$45,181.85	\$11,077.86	\$3,893.66	\$146.69	\$60,300.07
INDIRECT	33,240.29	8,149.98	2,864.57	107.92	44,362.76
TOTAL ADMIN. EXPENSE	\$78,422.14	\$19,227.84	\$6,758.23	\$254.61	\$104,662.82
<b>PARTICIPANT EXPENSES:</b>					
STIPENDS	35,990.65	41,821.65	52,988.00	53,765.11	184,565.41
TRAVEL	4,029.72	4,699.44	0.00	1,849.20	10,578.36
RELOCATION ALLOWANCE	0.00	1,500.00	5,000.00	3,112.84	9,612.84
TOTAL PART. EXPENSE	\$40,020.37	\$48,021.09	\$57,988.00	\$58,727.15	\$204,756.61
TOTAL PROGRAM EXPENSE	\$118,442.51	\$67,248.93	\$64,746.23	\$58,981.76	\$309,419.43

15-Dec-94

## AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
4/1/90-9/30/94

GRANT: N00014-90-J-1422  
GRANT PERIOD: 4/1/90-9/30/95  
AMOUNT AUTHORIZED: \$14,046,532  
AMOUNT AVAILABLE: \$10,348,582.50

ASEE ACCOUNT # PR10

	FY90	FY91	FY92	FY93	FY94	TOTAL
	01-Apr-90	01-Oct-90	01-Oct-91	01-Oct-92	01-Oct-93	01-Apr-90
	30-Sep-90	30-Sep-91	30-Sep-92	30-Sep-93	30-Sep-94	30-Sep-94
<b>ADMINISTRATIVE EXPENSES:</b>						
SALARIES	\$22,128.54	\$48,045.56	\$51,756.41	\$53,574.11	\$16,528.81	\$192,033.43
TEMPORARY SALARIES	693.75	3,465.24	283.73	0.00	0.00	4,442.72
BENEFITS	7,988.72	16,503.64	18,668.54	20,620.67	4,971.87	68,753.44
POSTAL SERVICE	452.46	1,421.98	5,460.57	1,007.05	1,443.45	9,785.51
MAIL HOUSE POSTAGE	0.00	1,400.00	0.00	0.00	8,500.00	9,900.00
EXPRESS/COURIER	991.00	1,545.32	533.55	699.85	186.42	3,956.14
TELEPHONE	275.71	481.02	2,246.65	693.29	163.75	3,860.42
TOLLS/FAX	0.00	0.00	0.00	118.15	521.90	640.05
FREIGHT	0.00	0.00	0.00	53.33	234.50	287.83
ACCOUNTANTS FEES	0.00	7,638.69	3,955.50	135.42	0.00	11,729.61
CONSULTANTS/HONORARIA	0.00	550.60	0.00	139.58	0.00	690.18
LEGAL/COPYRIGHT	0.00	720.00	100.20	0.00	0.00	820.20
COMP/OTHER PROF SERVICE	0.00	5,760.36	1,744.45	1,742.24	478.10	9,725.15
RECRUITMENT	0.00	1,278.06	42.79	0.00	0.00	1,320.85
SUPPLIES	647.00	2,326.19	761.07	283.16	478.75	4,496.17
REGISTRATION	0.00	25.00	710.00	0.00	0.00	735.00
MACHINE RENTAL/MAINT	0.00	718.39	0.00	1,565.48	383.91	2,667.78
SMALL EQUIPMENT	0.00	0.00	1,500.00	0.00	0.00	1,500.00
PRINTING	418.78	6,920.55	6,577.36	17,147.85	15,814.15	46,878.69
TYPESETTING/DESIGN	0.00	1,603.00	2,030.95	432.01	0.00	4,065.96
PHOTOCOPYING	314.56	1,770.75	908.60	137.62	62.77	3,194.30
MAIL HOUSE CHARGE	0.00	0.00	630.36	2,102.55	1,322.68	4,055.59
TRAVEL	727.67	1,883.35	2,320.60	790.83	405.02	6,127.47
COMMITTEE TRAVEL	0.00	1,806.98	2,795.64	2,020.18	2,312.91	8,935.71
MEETING EXPENSE	41.65	0.00	0.00	0.00	0.00	41.65
MEALS/LODGING	0.00	0.00	0.00	0.00	451.00	451.00
CATERING	0.00	5.88	131.40	0.00	0.00	137.28
COMMERCIAL ADS.	0.00	0.00	0.00	1,940.00	1,860.00	3,800.00
DUES	0.00	0.00	900.00	1,800.00	900.00	3,600.00
MAILING LABELS	0.00	1,276.57	1,223.94	0.00	3,280.08	5,780.59
RENT/OCCUPANCY	0.00	4,770.59	0.00	0.00	0.00	4,770.59
PROJECT COST	770.00	0.00	0.00	0.00	0.00	770.00
DATA PROCESSING	316.15	0.00	0.00	0.00	0.00	316.15
<b>TOTAL DIRECT EXPENSE</b>	<b>\$35,765.99</b>	<b>\$111,917.72</b>	<b>\$105,282.31</b>	<b>\$107,003.37</b>	<b>60,300.07</b>	<b>420,269.46</b>
INDIRECT	15,708.42	50,653.96	60,705.78	62,265.26	44,362.76	233,696.18
RETURNED CHECK TO ONR	15,000.00	112,000.00	0.00	23,000.00	0.00	150,000.00
<b>TOTAL ADMIN. EXPENSE</b>	<b>\$66,474.41</b>	<b>\$274,571.68</b>	<b>\$165,988.09</b>	<b>\$192,268.63</b>	<b>\$104,662.82</b>	<b>\$803,965.64</b>
<b>PARTICIPANT EXPENSES:</b>						
STIPENDS	1,942,230.00	2,368,695.80	2,103,594.29	2,029,351.44	184,565.41	8,628,436.94
TRAVEL	91,966.38	106,275.20	58,306.36	98,686.01	10,578.36	365,812.31
RELOCATION ALLOWANCE	131,500.00	155,181.31	112,500.00	119,000.00	9,612.84	527,794.15
<b>TOTAL PART. EXPENSE</b>	<b>\$2,165,696.38</b>	<b>\$2,630,152.31</b>	<b>\$2,274,400.65</b>	<b>\$2,247,037.45</b>	<b>\$204,756.61</b>	<b>\$9,522,043.40</b>
<b>TOTAL PROGRAM EXPENSE</b>	<b>\$2,232,170.79</b>	<b>\$2,904,723.99</b>	<b>\$2,440,388.74</b>	<b>\$2,439,306.08</b>	<b>\$309,419.43</b>	<b>\$10,326,009.04</b>

AMERICAN SOCIETY FOR ENGINEERING EDUCATION  
INTERIM FINANCIAL REPORT: 4/1/90-9/30/94

GRANT: N00014-90-J-1422  
GRANT PERIOD: 4/1/90-9/30/95  
AMOUNT AUTHORIZED: \$14,046,532  
AMOUNT AVAILABLE: \$10,348,582.50  
ASEE ACCOUNT # PR10

SUMMARY OF EXPENDITURES

PROGRAM EXPENSES

EXPENSES 4/1/90-9/30/94

1990 PROGRAM	2,232,170.79
1991 PROGRAM	2,904,723.99
1992 PROGRAM	2,440,388.74
1993 PROGRAM	2,439,306.08
1994 PROGRAM	309,419.43
TOTAL EXPENSES TO DATE	<u>\$10,326,009.04</u>

PAYMENTS RECEIVED

VOUCHER #1	500,000.00
VOUCHER #2	981,000.00
VOUCHER #3	1,047,000.00
VOUCHER #4	75,000.00
VOUCHER #5	348,000.00
VOUCHER #6	135,000.00
VOUCHER #7	29,499.00
VOUCHER #8	374,000.00
VOUCHER #9	1,095,459.00
VOUCHER #10	828,000.00
VOUCHER #11	136,280.00
VOUCHER #12	100,000.00
VOUCHER #13	112,102.00
VOUCHER #14	128,518.00
VOUCHER #15	336,763.00
VOUCHER #16	681,000.00
VOUCHER #17	124,781.00
VOUCHER #18	340,500.00
VOUCHER #19	319,539.50
VOUCHER #20	34,000.00
VOUCHER #21	402,000.00
VOUCHER #22	1,758,266.00
VOUCHER #23	216,180.00
VOUCHER #24	60,000.00
VOUCHER #25	87,000.00
VOUCHER #26	98,695.00
TOTAL PAYMENTS RECEIVED	<u>10,348,582.50</u>
TOTAL EXPENSES	<u>10,326,009.04</u>
AMOUNT AVAILABLE	22,573.46

## AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
10/01/93-9/30/94

CONTRACT: N00014-94-C-0043  
CONTRACT PERIOD: 3/28/94-9/30/96  
CONTRACT AMOUNT: \$638,193  
AMOUNT AVAILABLE: \$210,000

ASEE ACCOUNT # PR15

	1st QUARTER 01-Oct-93 31-Dec-93	2nd QUARTER 01-Jan-94 31-Mar-94	3rd QUARTER 01-Apr-94 30-Jun-94	4th QUARTER 01-Jul-94 30-Sep-94	TOTAL 01-Oct-93 30-Sep-94
<b>ADMINISTRATIVE EXPENSES:</b>					
SALARIES	\$0.00	\$0.00	\$15,353.08	\$26,577.02	\$41,930.10
TEMPORARY SALARIES	0.00	0.00	0.00	0.00	0.00
BENEFITS @ 30.08%	0.00	0.00	4,618.21	7,994.37	12,612.57
POSTAGE	0.00	0.00	146.77	93.98	240.75
POSTAGE 3RD CLASS	0.00	0.00	0.00	3,000.00	3,000.00
EXPRESS/COURIER	0.00	0.00	50.10	203.85	253.95
TELEPHONE	0.00	0.00	0.00	0.00	0.00
TOLLS/FAX	0.00	0.00	10.76	176.17	186.93
FREIGHT	0.00	0.00	0.00	0.00	0.00
OTHER PROF. SERVICES	0.00	0.00	302.80	779.30	1,082.10
SUPPLIES	0.00	0.00	8.00	228.41	236.41
MACHINE MAINT./RENTAL	0.00	0.00	1,871.56	3,522.00	5,393.56
PRINTING	0.00	0.00	0.00	11,525.51	11,525.51
MAILING LABELS	0.00	0.00	0.00	2,037.81	2,037.81
TYPESETTING/DESIGN	0.00	0.00	0.00	0.00	0.00
PHOTOCOPYING	0.00	0.00	0.00	23.43	23.43
MAIL HOUSE CHARGES	0.00	0.00	0.00	0.00	0.00
RECRUITMENT	0.00	0.00	416.67	0.00	416.67
COMMERCIAL ADS.	0.00	0.00	0.00	2,645.00	2,645.00
TRAVEL	0.00	0.00	157.61	1,205.88	1,363.49
COMMITTEE TRAVEL	0.00	0.00	0.00	44.44	44.44
DUES	0.00	0.00	0.00	0.00	0.00
TOTAL DIRECT EXPENSE	\$0.00	\$0.00	\$22,935.56	\$60,057.17	\$82,992.72
INDIRECT	0.00	0.00	16,873.69	44,184.06	61,057.75
TOTAL ADMIN. EXPENSE	\$0.00	\$0.00	\$39,809.25	\$104,241.23	\$144,050.47
FIXED FEE @ 5.1%	0.00	0.00	2,030.27	5,316.30	7,346.57
TOTAL PLUS FIXED FEE	\$0.00	\$0.00	\$41,839.52	\$109,557.53	151,397.05

AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
4/1/94-9/30/94

CONTRACT: N00014-94-C-0043  
CONTRACT PERIOD: 3/28/94-9/30/96  
CONTRACT AMOUNT: \$638,193  
AMOUNT AVAILABLE: \$210,000

ASEE ACCOUNT # PR15

SUMMARY OF EXPENDITURES

EXPENSES THRU 9/30/94	\$151,397.05
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Voucher #1	9,445.75
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Voucher #2	13,846.59
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Voucher #3	16,986.50
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Voucher #4	30,692.08
------------	-----------

Voucher #5	23,256.89
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TOTAL PREVIOUSLY REQUESTED	<u>\$94,227.81</u>
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TOTAL NOW REQUESTED	\$57,169.24
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AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
10/01/93-9/30/94

ASEE ACCOUNT # PR21

GRANT: N00014-94-1-0515  
GRANT PERIOD: 3/1/94-9/30/96  
GRANT AMOUNT: \$9,283,500  
AMOUNT AVAILABLE: \$1,660,100

	1st QUARTER 01-Oct-93 31-Dec-93	2nd QUARTER 01-Jan-94 31-Mar-94	3rd QUARTER 01-Apr-94 30-Jun-94	4th QUARTER 01-Jul-94 30-Sep-94	TOTAL 01-Oct-93 30-Sep-94
<b><u>PARTICIPANT EXPENSES:</u></b>					
STIPENDS	0.00	0.00	590,094.00	758,802.66	1,348,896.66
TRAVEL	0.00	0.00	26,477.05	21,430.99	47,908.04
RELOCATION ALLOWANCE	0.00	0.00	42,000.00	24,000.00	66,000.00
TOTAL PART. EXPENSE	\$0.00	\$0.00	\$658,571.05	\$804,233.65	\$1,462,804.70
<b>TOTAL PROGRAM EXPENSE</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$658,571.05</b>	<b>\$804,233.65</b>	<b>\$1,462,804.70</b>



AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT

10/01/93-9/30/94

GRANT: N00014-94-1-0515

GRANT PERIOD: 3/1/94-9/30/96

GRANT AMOUNT: \$9,283,500

ASEE ACCOUNT # PR21

AMOUNT AVAILABLE: \$1,660,100

SUMMARY OF EXPENDITURES

PROGRAM EXPENSES

FY94 PROGRAM	1,462,804.70
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TOTAL EXPENSES	1,462,804.70
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PAYMENTS RECEIVED

VOUCHER #1	10,000.00
------------	-----------

VOUCHER #2	1,040,250.00
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VOUCHER #3	424,750.00
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TOTAL PAYMENTS RECEIVED	1,475,000.00
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TOTAL EXPENSES	1,462,804.70
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AMOUNT AVAILABLE	12,195.30
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AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
10/01/93-9/30/94

GRANT: N00014-94-1-0127  
GRANT PERIOD: 10/1/93-10/26/96  
GRANT AMOUNT: \$2,700,000  
AMOUNT AVAILABLE: \$1,050,000

ASEE ACCOUNT # PR22

1st QUARTER 01-Oct-93 31-Dec-93	2nd QUARTER 01-Jan-94 31-Mar-94	3rd QUARTER 01-Apr-94 30-Jun-94	4th QUARTER 01-Jul-94 30-Sep-94	TOTAL 01-Oct-93 30-Sep-94
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**PARTICIPANT EXPENSES:**

STIPENDS	0.00	0.00	356,132.00	412,000.00	768,132.00
TRAVEL	0.00	0.00	25,696.59	32,332.62	58,029.21
RELOCATION ALLOWANCE	0.00	0.00	31,000.00	20,000.00	51,000.00
TOTAL PART. EXPENSE	\$0.00	\$0.00	\$412,828.59	\$464,332.62	\$877,161.21
TOTAL PROGRAM EXPENSE	\$0.00	\$0.00	\$412,828.59	\$464,332.62	\$877,161.21

AMERICAN SOCIETY FOR ENGINEERING EDUCATION

INTERIM FINANCIAL REPORT  
10/01/93-9/30/94

GRANT: N00014-94-1-0127  
GRANT PERIOD: 10/1/93-10/26/96  
GRANT AMOUNT: \$2,700,000  
AMOUNT AVAILABLE: \$1,050,000

ASEE ACCOUNT # PR22

SUMMARY OF EXPENDITURES

PROGRAM EXPENSES

FY94 PROGRAM 877,161.21

TOTAL EXPENSES 877,161.21

PAYMENTS RECEIVED

VOUCHER #1 79,436.00

VOUCHER #2 795,564.00

TOTAL PAYMENTS RECEIVED 875,000.00

TOTAL EXPENSES 877,161.21

AMOUNT AVAILABLE (2,161.21)

**1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
FINAL FUNDING DATA**

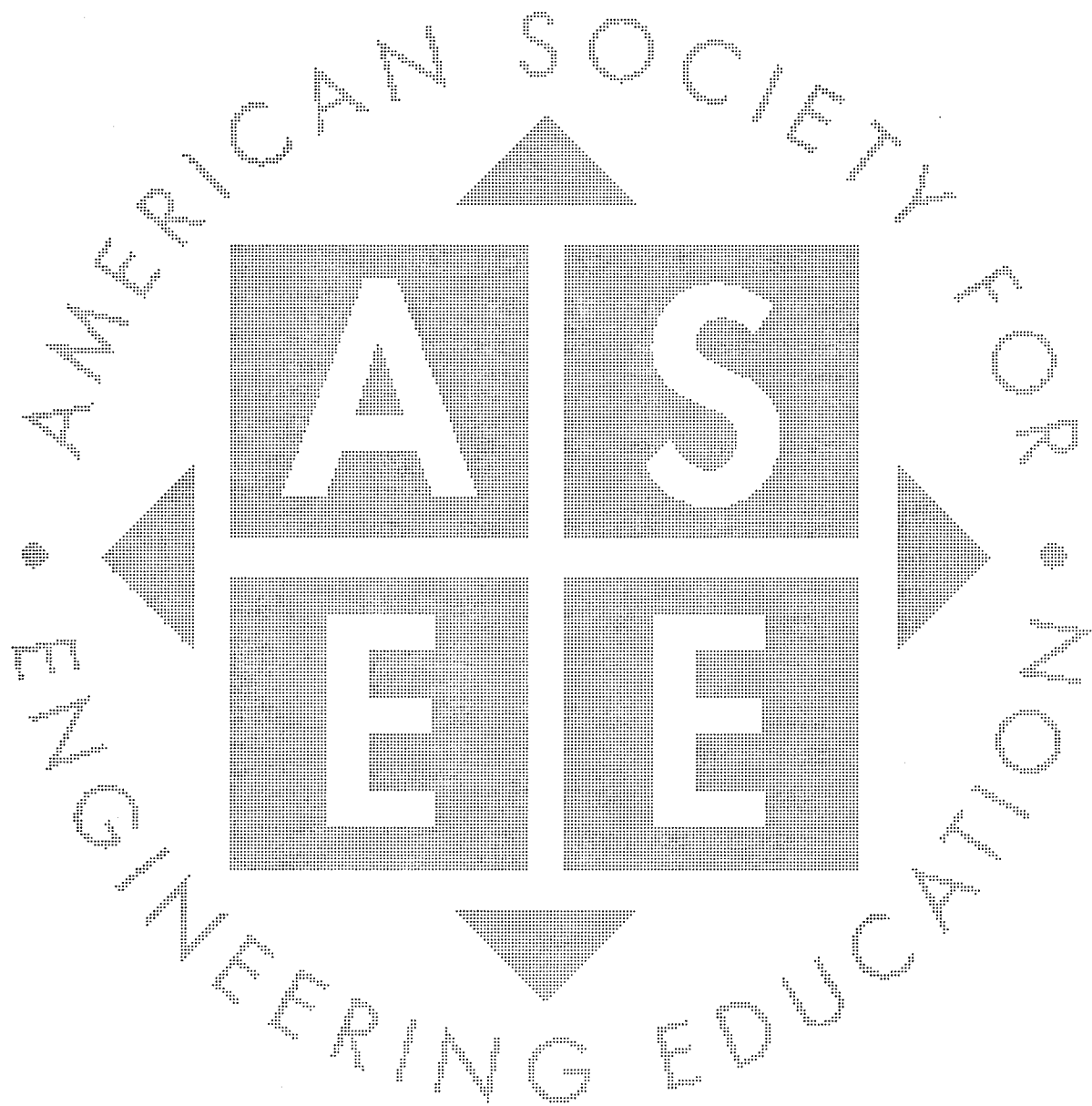
Center	Center Funded	ONR Funded	ONR HBCU/MI	Grad. Students	TOTAL
DEOMI	5	0	3	0	8
NAMRL	0	0	1	0	1
NAWC/AD *	18	0	14	1	32
NAWC/WD	2	0	3	0	5
NBL	0	0	0	0	0
NCCOSC	14	0	7	0	21
NFESC	5	0	3	0	8
NHRC	4	0	1	0	5
NMRI	1	0	2	0	3
NPRDC	0	0	9	0	9
NRL	28	0	10	0	38
NSMRL	0	0	1	0	1
NSWC/CD	11	0	3	0	14
NSWC/CSS	2	0	1	0	3
NSWC/DD	3	0	1	0	4
NTSC	4	0	1	0	5
NUWC	9	0	1	0	10
<b>TOTAL</b>	<b>106</b>	<b>0</b>	<b>61</b>	<b>1</b>	<b>167</b>

\*NAWC/AD has 2 additional faculty who are active duty Army; they are No Charge to the center  
The total number of faculty is 169 plus 1 grad student

**COST PER CENTER (CENTER FUNDED):**

Center	No. of Faculty	Amount Due	\$ Paid for Sabbaticals	No. of Grads.	\$ Paid for Grad Student	TOTAL PAID
DEOMI	5	\$87,500.00		0	\$0.00	\$72,000.00
NAMRL	0	\$0.00		0	\$0.00	\$0.00
NAWC/AD	18	\$315,000.00		1	\$6,150.00	\$262,500.00
NAWC/WD	2	\$35,000.00		0	\$0.00	\$0.00
NBL	0	\$0.00		0	\$0.00	\$0.00
NCCOSC	14	\$245,000.00		0	\$0.00	\$0.00
NFESC	5	\$87,500.00	\$15,000.00	0	\$0.00	\$102,500.00
NHRC	4	\$70,000.00		0	\$0.00	\$68,000.00
NMRI	1	\$17,500.00		0	\$0.00	\$0.00
NPRDC	0	\$0.00		0	\$0.00	\$0.00
NRL	28	\$490,000.00	\$69,550.00	0	\$0.00	\$541,500.00
NSMRL	0	\$0.00		0	\$0.00	\$0.00
NSWC/CD	11	\$192,500.00	\$32,145.00	0	\$0.00	\$32,145.00
NSWC/CSS	2	\$35,000.00		0	\$0.00	\$35,000.00
NSWC/DD	3	\$52,500.00		0	\$0.00	\$52,500.00
NTSC	4	\$70,000.00		0	\$0.00	\$0.00
NUWC	9	\$157,500.00		0	\$0.00	\$148,750.00
<b>TOTAL</b>	<b>106</b>	<b>\$1,855,000.00</b>	<b>\$116,695.00</b>	<b>1</b>	<b>\$6,150.00</b>	<b>\$1,314,895.00</b>

## ATTACHMENT B



### **Participant Salaries & Stipend Levels**

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM

Participant Salaries

\$20,000-\$29,999	\$30,000-\$39,999	\$40,000-\$49,999	\$50,000-\$59,999	\$60,000-\$69,999	\$70,000-\$79,999	\$80,000-\$89,999	\$90,000-\$99,999
26,000	30,500	40,000	50,000	60,000	70,000	80,000	90,000
29,500	31,000	40,000	50,000	60,000	70,000	81,600	91,056
	32,000	40,000	50,000	60,000	70,110	82,656	96,000
	34,000	40,103	50,700	60,000	70,500	85,200	
	35,000	40,300	50,850	60,000	72,800	87,321	
	35,000	40,700	51,135	60,000	73,260	88,000	
	35,766	41,600	51,600	60,000	73,600		
	36,000	42,000	52,000	60,000	73,800		
	36,000	42,000	52,000	60,000	74,000		
	36,000	42,000	52,000	60,000	75,000		
	36,000	43,000	52,230	60,000	75,497		
	36,200	43,000	52,500	60,500	78,000		
	37,200	44,000	53,000	61,985	78,500		
	38,000	44,000	53,000	62,000			
	38,640	44,100	53,000	62,000			
	39,000	45,000	53,500	62,500			
	39,492	45,000	53,600	63,000			
	39,600	45,000	53,835	63,000			
		45,015	54,000	63,500			
		45,200	54,000	63,600			
		45,500	54,000	64,000			
		46,600	54,100	64,500			
		47,500	54,436	65,000			
		48,000	55,000	65,000			
		48,000	55,000	65,050			
		48,250	55,423	65,617			
		48,596	57,000	66,000			
		48,600	57,100	66,000			
		48,745	57,333	66,500			
		49,000	57,500	66,860			
		49,032	58,000	67,650			
		49,500	59,000	68,000			
			59,800	68,000			
				68,500			
				68,500			
				68,700			
				69,000			
				69,000			
				69,271			
				69,800			

Salary Range	No. Per Range
\$20,000-\$29,999	2
\$30,000-\$39,999	18
\$40,000-\$49,999	32
\$50,000-\$59,999	33
\$60,000-\$69,999	40
\$70,000-\$79,999	13
\$80,000-\$89,999	6
\$90,000-\$99,999	3
Total	147

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Participants by Stipend Level and Laboratory

LAST NAME	STIPEND LEVEL	LABORATORY
Barnes	S	DEOMI
Eaton	F	DEOMI
Grosch	F	DEOMI
Knouse	S	DEOMI
Landis	D	DEOMI
Moore	F	DEOMI
Niebuhr	S	DEOMI
Simpson	S	DEOMI
Patra	S	NAMRL
Aleamar	S	NAWC/AD
Arterburn	F	NAWC/AD
Boerner	D	NAWC/AD
Carpenter	S	NAWC/AD
Coll	Grad. Student	NAWC/AD
Es-Said	F	NAWC/AD
Farahmand	F	NAWC/AD
Fettahlioglu	S	NAWC/AD
Garcia-Otero	F	NAWC/AD
Gayen	S	NAWC/AD
George	S	NAWC/AD
Goldberg	S	NAWC/AD
Grosshans	F	NAWC/AD
Hou	F	NAWC/AD
Hrebien	S	NAWC/AD
Hughes	S	NAWC/AD
Jen	S	NAWC/AD
Johnson	S	NAWC/AD
Jones	S	NAWC/AD
Langford	F	NAWC/AD
Lefkovitz	S	NAWC/AD
McShane	F	NAWC/AD
Mehta	F	NAWC/AD
Ownby	S	NAWC/AD
Pearson	S	NAWC/AD
Raghavan	S	NAWC/AD
Sastri	F	NAWC/AD
Scerbo	S	NAWC/AD
Shih	S	NAWC/AD
Singh	S	NAWC/AD
Tyagi	D	NAWC/AD
Wernicki	F	NAWC/AD
Williams, R.	F	NAWC/AD
Benumof	S	NAWC/WD
McLauchlan	S	NAWC/WD
Swearingen	S	NAWC/WD
Wallner	F	NAWC/WD
Wei	F	NAWC/WD

Bull	F	NCCOSC
Chen	S	NCCOSC
Gandhi	F	NCCOSC
Harris	F	NCCOSC
Hashemi	S	NCCOSC
Hensgen	S	NCCOSC
Herwig	F	NCCOSC
Hira	F	NCCOSC
Hui	S	NCCOSC
Hutchens	S	NCCOSC
Lopez-Lopez	S	NCCOSC
Moghaddasi	F	NCCOSC
Prasanna	S	NCCOSC
Randhawa	F	NCCOSC
Root	S	NCCOSC
Saiedpazouki	F	NCCOSC
Shadaram	S	NCCOSC
Sheu	S	NCCOSC
Soumekh	S	NCCOSC
Wang	S	NCCOSC
Zietz	S	NCCOSC

Beliveau	S	NFESC
Lewis	S	NFESC
Mathews	S	NFESC
Norris	F	NFESC
Rahman	S	NFESC
Ramsamooj	S	NFESC
Singhal	S	NFESC
Viswanath	F	NFESC

Angus	S	NHRC
Arnall	S	NHRC
Kobus	F	NHRC
Lindell	S	NHRC
Putcha	D	NHRC

Garber	F	NMRI
Kassim	S	NMRI
Ng	S	NMRI

Denley	F	NPRDC
Hill	S	NPRDC
Pardee	F	NPRDC
Thomas	F	NPRDC
Tobias	D	NPRDC
Woods, B.	F	NPRDC
Woods, W.	S	NPRDC
Yuster	S	NPRDC

Adebayo	F	NRL
Aggarwal	S	NRL
Akundi	S	NRL
Bernard	S	NRL
Bhar	S	NRL
Buckley	F	NRL



Butcher	S	NRL
Byrne	S	NRL
Coleman	F	NRL
Corson	F	NRL
Curran	D	NRL
Darby	F	NRL
Dayhoff	S	NRL
Dean	F	NRL
Derman	S	NRL
Edgar	S	NRL
Faas	S	NRL
Friedli	F	NRL
Harihar	S	NRL
Howard	F	NRL
Huberman	F	NRL
Ikossi-Anastasiou	S	NRL
Kasilingam	F	NRL
Kidd	F	NRL
Kim	S	NRL
Lawless	F	NRL
Lea	F	NRL
Lindner	S	NRL
Mania, Jr.	F	NRL
Massa	D	NRL
Medhurst	F	NRL
Miller	S	NRL
Pandey	S	NRL
Rabbany	F	NRL
Shaw	D	NRL
Stalick	S	NRL
Stratton	S	NRL
Thompson	F	NRL
Williams, C.	S	NRL

Collier	F	NSMRL
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Beale	S	NSWC/CD
Borgiotti	D	NSWC/CD
Bush	F	NSWC/CD
Jang	F	NSWC/CD
Raichel	S	NSWC/CD
Ramchandani	F	NSWC/CD
Sarper	F	NSWC/CD
Tiller	F	NSWC/CD
Uberall	D	NSWC/CD
Vizzini	S	NSWC/CD
Wasyliwskyj	S	NSWC/CD
Wilson	F	NSWC/CD
Witulski	F	NSWC/CD
Zhang	F	NSWC/CD

Abushagur	S	NSWC/CSS
Gross	S	NSWC/CSS
Kamman	S	NSWC/CSS

Lipscomb	S	NSWC/DD
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McIntyre	S	NSWC/DD
Rogers	S	NSWC/DD
Welch	F	NSWC/DD

Fishwick	S	NTSC
Gonzalez	S	NTSC
Ortiz	S	NTSC
Petrasko	F	NTSC
Richie	F	NTSC

Chassaing	S	NUWC
Gray	S	NUWC
Holman	S	NUWC
Kaufman	D	NUWC
Kuria	F	NUWC
Marshall	S	NUWC
Nagem	S	NUWC
Nelson	F	NUWC
Olinger	F	NUWC
Pendergrass	F	NUWC

<u>STIPEND LEVEL</u>	<u>AMOUNT PER WEEK</u>
----------------------	------------------------

Fellow (F)	\$1,150.00
Senior (S)	\$1,400.00
Distinguished (D)	\$1,650.00

<u>STIPEND LEVEL</u>	<u>TOTAL PER LEVEL</u>
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Fellow (F)	66
Senior (S)	90
Distinguished (D)	11

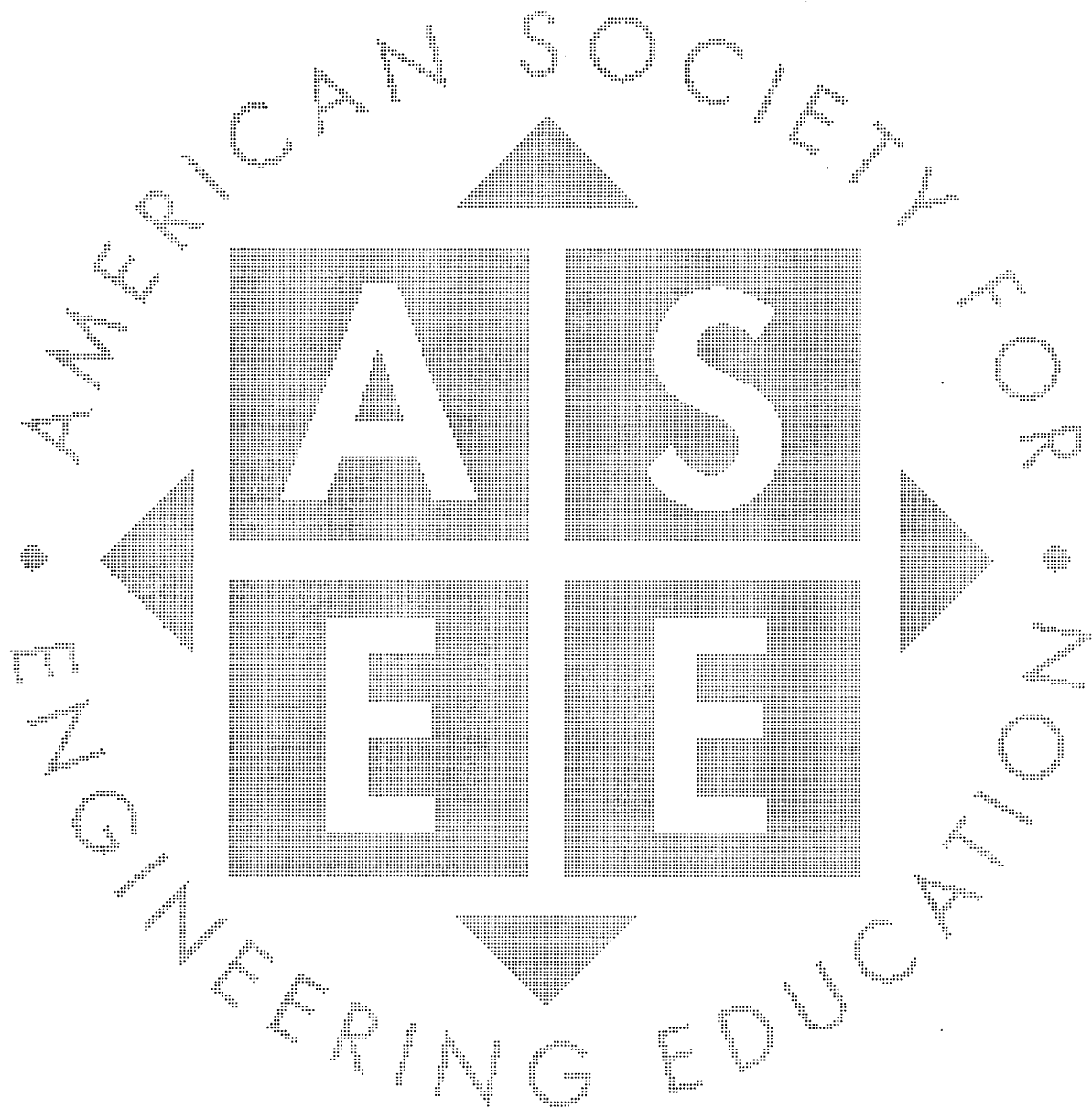
Total	167*
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\*Does not include the graduate student from NAWC./AD

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Participant Appointment Level Analysis

Center	Fellow	Senior	Distinguished	Total
DEOMI	3	4	1	8
NAMRL	0	1	0	1
NAWC-AD	12	18	2	32
NAWC-WD	2	3	0	5
NBL	0	0	0	0
NCCOSC	8	13	0	21
NFESC	2	6	0	8
NHRC	1	3	1	5
NMRI	1	2	0	3
NPRDC	4	3	1	8
NRL	17	19	3	39
NSMRL	1	0	0	1
NSWC-CD	8	4	2	14
NSWC-CSS	0	3	0	3
NSWC-DD	1	3	0	4
NTSC	2	3	0	5
NUWC	4	5	1	10
Total	66	90	11	167

# ATTACHMENT C



**1994 Application Booklet**

# *U.S. Navy—ASSEE*

Summer

Faculty

Research

Program

Sabbatical

Leave

Program

1 9 9 4

American Society for Engineering Education  
1818 N Street, N.W., Suite 600  
Washington, D.C. 20036  
USA

## Naval Research Laboratory

Washington, D.C., Orlando, FL, and Stennis Space Center, MS

### Washington, D.C.

**Space Science:** X-ray, radio and IR astronomy, UV measurements, gamma and cosmic ray astrophysics, solar physics, solar terrestrial relationships, atomospheric physics, and ionospheric effects.

**Plasma Physics:** Laser plasma, plasma and high power electromagnetic radiations, experimental plasma physics, geophysical and plasma dynamics, and plasma theory and technology.

**Acoustics:** Acoustic media characterization, applied ocean acoustics, physical acoustics, software systems development, and large aperture acoustics.

**Radar:** Radar analysis and techniques, target characteristics, identification systems, electromagnetics, search and airborne radar, and systems control and research.

**Tactical Engineering:** Offboard countermeasures, EW support measures, airborne and ships EW systems, and advanced techniques.

**Computational Physics and Fluid Dynamics:** Fluid dynamic flows, combustion dynamics, ionospheric/atmospheric dynamics and chemistry, and advanced numerical techniques.

**Structure of Matter:** Advanced diffraction analyses, macromolecules, and glassy, fibrous and crystalline structures.

**Chemistry:** Chemical diagnostics, polymeric materials, inorganic and electrochemistry, surface chemistry, combustion and fuels, and bioengineering.

**Material Science and Technology:** Ceramic, composite and thermostructural materials, physical metallurgy, environmental effects and mechanics of materials.

**Optical Sciences:** Optical probes and techniques, applied optics, laser physics, and electro-optical technology.

**Condensed Matter and Radiation Sciences:** Radiation survivability, interaction with matter, physics of metals and condensed matter, and materials modification and analysis.

**Electronics Technology:** Solid state devices, surface physics, electronic materials, microwave and millimeter wave technology, and semiconductors.

**Information Technology:** Artificial intelligence, communication systems engineering, transmission technology, integrated warfare technology, and computer science and systems.

**Space Systems and Technology:** Terrestrial, mechanical, digital, RF, and optical systems, electrical systems and spacecraft integration, systems engineering and analysis, and space sensing applications.

### Orlando, FL

**Underwater Sound:** Acoustical materials and transducers, acoustical systems.

### Stennis Space Center, MS

**Oceanography:** Ocean dynamics and prediction, ocean sciences, small scale phenomenology, ocean technology.

**Marine Geoscience:** Tactical oceanographic warfare support, marine physics, seafloor science, mapping, charting and geodesy.

**Marine Meteorology:** Prediction systems, forecast support.

## Naval Undersea Warfare Center

Newport, RI and New London, CT

**Acoustics:** Sound propagation in various ocean environments including ray and mode analysis, noise reduction research, target strength analysis and coating design, transducer array and parametric sonar designs, holographic modeling and sonarprediction.

**Numerical Analysis:** Computational fluid dynamics, computational fluid structure interaction, dynamic simulation, sound fields and sonar array configurations, finite element analysis, long range acoustic detection, localization and tracking, decoy studies, underwater electromagnetism.

**Communications:** Underwater voice & electromagnetic methodologies for communication to submarines.

**Optics:** Fiber optic thinline arrays and umbilicals, underwater laser applications, periscope focusing and photography.

**Signal and Information Processing:** Active sonar classification, higher-order spectral estimation, radiated noise modeling, surface ship computer architecture. Real time software generation, general classification studies, submarine computer architecture, narrow-band tracking & acoustic signal processing, adaptive filtering techniques, computer-aided decision making.

**Hydrodynamics:** Computational fluid dynamics, turbulence models, drag reduction techniques, boundary layer experimentation, hull shapes, flow fields.

**Underwater Propulsion:** Thermal & electric propulsion research including all phases of chemical and electrochemical energy sources and prime-mover research, development and evaluation of high energy and power dense systems up to 1000 horsepower. High power electronics, motor speed controllers, power dense AC and DC motors.

**Chemistry/Materials:** Fuels research, electrochemistry of high energy density batteries & dynamic fuel cells, polymer chemistry, properties of materials.

**Ocean Sciences/Technology:** Studies of ocean fronts, microstructure, and internal waves, sound absorption and chemical relaxation, volume scattering, bottom sediments & dynamic properties of bottom materials & interaction with sound in the water-column. Ocean engineering applications, structural mechanics, test platforms, underwater range technology.

**Systems Engineering:** Submarine and surface ship sonar, underwater weapons and targets, underwater ranges, weapon system integration and control, submarine electromagnetics, weapon launchers.

**Major Technical Disciplines:** Applied mechanics, electronic & mechanical engineering, general engineering, mathematics and statistical analysis, physics.

## Naval Surface Warfare Center, Dahlgren Division

Dahlgren Laboratory/White Oak Detachment

Dahlgren, VA and Silver Spring, MD

**Advanced Technology:** Influences of electromagnetic energy on electronics. Aerodynamic research using hypersonic tunnels to Mach 18. Directed energy research relating to pulsed power, switching,

energy storage, charged particle beam steering, target interaction and propagation. Applications of superconductivity to sensing physical parameters. Biotechnology applications to reduce environmental impact on materials. Parallel processing and other advanced computer techniques to improve information processing. Hydrodynamic and water entry research. Chemistry for insensitive explosives compounds. Research involving non-linear dynamics, dynamics, chaos and fractals using a combination of mathematics and physics, both theoretical and applied.

**Advanced Materials:** Specialized metallic and nonmetallic materials emphasizing composites, lightweight metal alloys, and material evaluation including corrosion phenomena. Development of energetic materials utilizing synthesis of high energy molecules, formulation of explosives and propellants, physics of detonation processes, and target structural responses.

**Computer Systems:** Advanced systems using optical signal processing devices, biomolecular components, fiber optics, parallel processing, VHSIC, and computer integration to achieve real time information processing and transfer. Application of system engineering principles to achieve integrated systems. Development of specialized management information programs in support of Command, finance, personnel, public works, and supply.

**Electronics Systems:** Sensor research for space, surface, and underwater applications based on E&M, optics, and acoustic physical principles. Signatures are derived from noisy and scattering environments. Electronics to process and display the data are developed for application to landbased, sea, and air static and dynamic conditions.

**Mechanical Systems:** Structures for air and underwater vehicles including detailed modeling of the static and dynamic properties of the equipment using advanced codes. Development of ordnance consisting of missile launching systems; mine systems; safing, arming, and fuzing components; warheads. Analyses of the effects of all ordnance.

**Space:** Ephemerides for navigational and geodetic satellites, satellite radar altimetry, and GPS satellites applications. Software system development for advanced guidance systems. Advanced re-entry materials and vehicles.

## Naval Air Warfare Center, Aircraft Division

Warminster, PA

The Naval Air Warfare Center, Aircraft Division (NAWCAD) is the full spectrum research, development, test and evaluation (RDT&E), engineering, and fleet support center for air platforms. The product areas include aircraft systems (manned and unmanned), airborne technology, propulsion, flight test and engineering, avionics design and production, crew systems and aircraft-platform interface.

The most important assets are the more than 8000 scientists and engineers (S&E's) and technicians and 15,000 acres and 7,400 square miles of test ranges housing RDT&E facilities. Our unique capabilities and state-of-the-art facilities are unmatched in the world. NAWCAD is located at five different locations: Indianapolis, IN (20 miles from Indianapolis airport); Lakehurst, NJ (68 miles south of New York City, 54 miles east of Philadelphia, and 14 miles from Atlantic City); Patuxent River, MD (65 miles south, southeast of Washington, D.C.); Trenton, NJ (30 miles from Philadelphia); and Warminster, PA (23 miles north of Philadelphia).

Expert technical cooperation is needed in various technical areas such as Physics, Chemistry, Mathematics, Electronics, Aerodynamics, Material Science & Engineering (software, hardware, processing, etc.). Various state-of-the-art technologies of the NAWCAD are as follows:

**Acoustic Science & Technology:** Ocean acoustics, physical oceanography, active and passive sonar technology, sonar processing technology, acoustic and non-acoustic sensors, microwave radar, blue-green laser radar and transduction material technology.

**Advanced Aircraft Materials:** Materials science and engineering, hybrid materials, light weight and high strength alloys, processing science, fatigue and fracture, structure design optimization, polymer, metal and ceramic matrix composites, intermetallics, refractory metal alloys and coatings, corrosion inhibitors, environmental/surface interactions in adhesives, sealants, elastomers, electronic materials, lubricants, non-destructive testing (for structural integrity and stealthiness), polymer chemistry, composite repair technologies, and development of smart skins and smart structures.

**Advanced Processors/Computer Systems Technology:** RISC and parallel computer architectures, data fusion, information storage (optical disks, semiconductor and ferroelectric memories, magnetic media, advanced recorders), Artificial Intelligence, Neural Network systems, real-time telemetry processing, symbolic computer algebra/mathematics, tools for logistic planning, flight operations aircraft servicing and reporting systems, and object oriented systems.

**Aircraft Controls and Displays:** Helmet mounted displays, flat panel displays, including LED, LCD, electroluminescent, plasma, field emission, and vacuum fluorescent, projection displays, etc.

**Aircraft Design and Performance:** Design, development and evaluation, V/STOL, RPVs, computational fluid dynamics, flight vehicle systems, digital fly-by-wire, flying qualities criteria, etc.

**Avionic Systems:** Systems engineering, technology management, and application in avionics, advanced concepts for avionics (developing requirements, conducting analyses), define and evaluate avionics architecture for new and upgraded aircraft (simulation and hot bench capabilities), etc.

**Environmental Sensing and Information Display:** Development and/or application of environmental sensors (wind velocity and direction) in support of aircraft operations at sea.

**Fiber Optic Technology:** Infrared detection and imaging systems, signal and image processing, automatic target recognition, reconnaissance sensors, LIDAR systems, hydrographic and atmospheric measurements, lasers and countermeasure systems.

**Flight Control Design and Aerospace Test and Evaluation Engineering:** Fluidic flight control, air frame dynamics and simulation, flight control system design and instrumentation, flying qualities analysis and simulation, fluidic control system design and test, conceptual design and evaluation of V/STOL, UAV, hypersonic, and tilt rotor, flight vehicle systems, flight testing techniques (instrumentation, simulation and support), aerodynamic and structural analysis etc.

**High Speed Fiber Optics Networks:** High speed fiber optic components and networks, high speed links, optical switching and modulation techniques, nonlinear optical materials and devices.

**High Strength Cables and Harnesses:** Design and manufacture of cables and harnesses for aircraft flight operations and emergency landing conditions at sea.

**Life Support and Human Factors:** Personnel in-flight and crash protection, breathing and in-flight escape systems, survival and rescue equipment, emergency locator/beacon voice radios, advanced helmet mounted displays, man-machine interface in flight environment, stress physiology of acceleration loads, biochemistry in stress, G-protective techniques and devices, dynamic flight simulation, air

crew visual performance and human factor engineering.

**Manufacturing Technology:** Leading edge in product design, manufacture, quality assurance through combine computer aided design (CAD), computer aided manufacturing (CAM), computer integrated manufacturing (CIM) functions, reverse engineering, electronics assembly, cable and harness fabrication, printed circuit board fabrication, hybrid microelectronics, machining, heat treatment, plating, welding, stereolithography, and computer aided acquisition and logistics support.

**Microwave Technology:** Solid state conformal radar, sea clutter, non-cooperative target recognition, MMIC, CAD/CIM/CAM and adaptive antennas and processing.

**Systems, Software, and Computer Technologies:** Neural networks, fuzzy logic, case based reasoning, genetic algorithms, virtual reality, robotics, design error systems, intelligent control, parallel processing, software technologies for signal processing, operating system software for real-time Mission Critical Computer Resources (MCCR), AI and expert systems, high-level specification languages for automatic code generation, software engineering environments, interface standards and software frameworks for integrating Computer-Assisted Software Engineering (CASE) tools, avionics architecture design and analysis, fault tolerant avionics design, etc.

**Weapons System Analysis, Design, Integration:** Operations analysis as applied to weapon system modeling, effectiveness and survivability, system design, optimization, filtering, design studies to meet reliability and maintainability and cost targets.

## Naval Surface Warfare Center, Carderock Division

Carderock and Annapolis, MD

Facilities include deep water model basins, water tunnels, rotating arm, maneuvering and seakeeping basins, anechoic wind tunnel, deep ocean pressure tanks, CRAY and other state of the art computers, hydrofoil and air cushion vehicle test units, subsonic and transonic wind tunnels and many others.

**Acoustic Ship Silencing:** Acoustic silencing of submarines and surface ships, reduction of sonar self-noise and target strength, sound and vibration, acoustical characteristics of structural materials, hydrodynamic noise suppression, acoustical data analysis, wetted surface treatment for noise control, acoustic fields of submarine and surface vehicles, non-linear behavior in turbo machinery flow.

**Vulnerability:** Ship vulnerability, survivability and protection, weapons effects, damage control, combat readiness of naval vehicles and their weapons, fire fighting sub-systems.

**Survivability, Structures and Materials:** Structures, materials and fabrication techniques for submarine and surface vehicles with emphasis on advanced structural concepts, numerical methods, probabilistic based design/analysis methods, structural analysis, seaway loads prediction; metals and alloys, high strength steels; spray metal fabrication; advanced composite materials; fracture, fatigue; physical metallurgy; welding research; automated manufacturing processes; nondestructive evaluation (NDE); marine corrosion; fouling control; coatings and ship protection; ship-related environmental quality, water treatment, gray water and oily waste systems, gaseous exhausts; high temperature ceramics; superconducting materials; marine tribology, surface wear; fire safety and sea survival equipments, and life support technology.

**Ship Machinery Systems:** Propulsion, power and auxiliary machinery systems for surface ships, submarine auxiliary machinery, energy conservation, environmental engineering, alternate energy sources (other than nuclear) and information technology. Solid state power conditioning; fiber optic sensors and communications; deep ocean technology; machinery acoustic and magnetic silencing; non-linear flow and acoustics in turbomachines.

**Ship Systems and Logistics:** Integrated logistic support (ILS), and acquisition methodologies, micro-analysis, forecasting, artificial intelligence and robotics, advanced ship concepts, assessments and projection of technology.

**Ship Hydromechanics:** Resistance of ships and submarines, hydrodynamic flow characteristics around ship hulls and appendages, propeller design. Ship stability, seakeeping, maneuvering performance and ship directional control devices. Prediction of hydrodynamic loads.

**Advanced Electronics Instrumentation:** New and improved instrumentation for research and full scale applications, improved computational methods, advanced electronic devices, laser doppler velocimeters, fiber optic probes.

**Submarine Maneuvering:** Stability, control, and maneuvering characteristics, mathematical models for simulation of the motions, recovery from control surface casualties, hydrodynamic forces and moments developed on the hull, appendages, and propulsor, hydrodynamic flow measurements, and new control concepts.

**Electromagnetic Signatures:** Wave theory, optics, radar and infrared instrumentation signal and image processing systems and techniques.

## Naval Command, Control and Ocean Surveillance Center, RDT&E Division (NRaD)

San Diego, CA

NRaD employs about 1800 scientists and engineers with degrees in physical and biological sciences and engineering. An annual budget of \$630 million supports them, along with necessary technicians and administrative personnel. and R&D contracts. The primary facilities of NRaD are located at San Diego, California with a detachment at Warminster, Pennsylvania.

**Electromagnetic and Acoustic Signal Generation, Detection and Propagation:** Research and development of transmitters and receivers for the entire electromagnetic spectrum including optical and electro-optical sources, sensors, and fibers; acoustic sensors, transducers, and sensor arrays, performance prediction and modeling of propagation path, oceanic acoustic and atmospheric electromagnetic signal propagation, fixed and deployable ocean surveillance sensors.

**Electromagnetic and Acoustic Information and Signal Processing:** Data fusion, C3 theory, C3 systems architecture, information/database architecture, and large-scale computer data processing. Satellite communication, encryption, secure voice links, anti-jam communication systems and software development. High resolution spectral estimation and beam forming, advanced methods and algorithms for detecting, classifying and beamforming acoustic and radar signals, and image processing.

**Ocean and Bio-Technology:** Acoustic capabilities, physiology and trainability of marine animals, human operator performance, search, salvage and deep ocean exploration and object recovery, underwater tethered and remotely-piloted vehicles, biological indicators of sea water pollutants.

**Solid State Physics and Engineering:** Planar integrated circuit microwave transistor technology employing III-V compounds, silicon integrated circuit research and development, ion implantation, quantum wells, light-emitting diode and laser development, test and evaluation, electro-optic and fiber-optic devices, epitaxial and MOCVD growth evaluation of electronic and optical properties, and ultrathin silicon on sapphire devices.

**Other Research Thrusts:** Aircraft communications and navigation, human factors research, neural networks, high speed rule-based AI languages, natural language processing, and machine learning.

## Behavioral/Organizational Science Research

### Navy Personnel Research and Development Center

San Diego, CA

The Navy Personnel Research and Development Center (NPRDC) is the principal Navy R&D Center for the development of people-related technology. NPRDC is located in the Point Loma area of San Diego, where it shares facilities with the Naval Command, Control and Ocean Surveillance Center and the Naval Health Research Center. The Centers staff includes approximately 200 professionals in such disciplines as psychology, education, economics, mathematics, statistics, and operations research. Facilities include a brain evoked potential research laboratory, various computer systems, multi-media terminal systems for automated testing and training, a mobile van and trailer used to conduct experiments in the field and portable video and photographic recording devices, in addition to an electronics workshop and photographic laboratory.

#### NPRDC Current Research Interests

**Manpower Systems:** This program involves the design and development of computer-based models and decision support systems for manpower planning. Projects include development of advanced network models to solve personnel assignment problems, development of personnel forecasting techniques, and design of interactive decision support systems for use by Navy and Marine Corps manpower planners. Work involves mathematical and statistical modeling on large computers, microprocessors, and data bases; advanced statistical, econometric, and mathematical optimization techniques; and scientific programming languages and statistical packages.

**Personnel Systems:** This program focuses on the development of systems and procedures for recruiting, selecting, classifying, and utilizing officer, enlisted, and civilian personnel to improve performance and retention. Research issues include recruiting/recruiter incentives and effectiveness, long range predictions of performance and leadership potential, utilization of women, cultural diversity, quality of life, and use of computer technology to enhance attitude survey methodology.

**Personnel Testing:** This program develops and evaluates large-scale computerized adaptive testing system to determine enlistment eligibility and to classify selected applicants into entry-

level skill areas. Current research focuses on the psychometric relationship between the computerized and paper-and-pencil tests currently used and the development of new computer-administered tests for aptitudes (reaction time, spatial ability, psychomotor skill, etc.) that cannot be measured by traditional paper-and-pencil testing. The use of biographical data for applicant screening and the measurement of on-the-job performance are also being studied.

**Instructional Technology:** The Training Department engages in basic and applied research in the cognitive, instructional, social, and engineering sciences that are contributing disciplines to instructional technology. Instructional technology is concerned with the design and management of instructional contingencies between teachers, materials and equipment, and students. Research opportunities are wide-ranging, including issues fundamental to learning, design of learning environments, ways of assessing competence, skill retention, and techniques for implementation and dissemination of knowledge.

**Organizational Systems:** The organizational systems program conducts basic and applied research on methods to improve the organizational effectiveness of the Navy commands. The objectives are to expand the knowledge base concerning organizational and motivational factors that contribute to the enhanced effectiveness. There is also interest in educational methods for teaching managers new management techniques. An applied focus of this program involves Total Quality Leadership (TQL), that is based, in part, on the management theories of W. Edwards Deming.

**Neurosciences:** The neurosciences research program is engaged in a variety of projects to expand both basic and applied knowledge of human information processing through biopsychometric (neuroelectric and neuromagnetic) recording of brain activity. The work involves the laboratory and field assessment of individual differences to determine their implications for improved training and improved prediction of on-the-job performance, particularly under fatigue and stress.

### Defense Equal Opportunity Management Institute

Cocoa Beach, FL

DEOMI is a DoD Training/research agency specializing in addressing equal opportunity (EO) concerns in the military services. As one of its main emphases, the Institute conducts research on a number of fairness/EO issues and serves as a DoD clearinghouse for EO research. Summer Faculty from numerous behavioral science disciplines are solicited, including:

**Psychology:** Industrial/organizational psychology, social psychology, group dynamics, cross-cultural communications, and other specialties with an emphasis in research on racism, sexism,

## Special Note

To determine the degree to which members of the diverse segments of the population are reached by this announcement, ASEE requests that you fill in the appropriate block(s) below.

☐ Male   ☐ Female   Disabled: ☐ No   ☐ Yes

Underrepresented Minority: ☐ No   ☐ Yes (Check one box below.)

☐ African American   ☐ Hispanic   ☐ Native American   ☐ Asian   ☐ Pacific Islander   ☐ Other \_\_\_\_\_

In accordance with Federal statutes and regulations and Navy policies, no person on the grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, denied the benefits of, or be subject to discrimination under, any program or activity receiving financial assistance from the U.S. Navy.

## Recommendations

Please supply the name, address, and telephone numbers of three professional references. The first should be your present Department Head or Dean.

1. Dean or Department Head \_\_\_\_\_

Address \_\_\_\_\_ Phone (   ) \_\_\_\_\_

2. Name of Reference \_\_\_\_\_

Address \_\_\_\_\_ Phone (   ) \_\_\_\_\_

3. Name of Reference \_\_\_\_\_

Address \_\_\_\_\_ Phone (   ) \_\_\_\_\_

In addition to the above persons ASEE or the Navy may contact your Ph.D. or Sc.D. dissertation director and your sponsoring agency representative for verification of the information requested on the preceding page.

NOTE: Applicants who wish to be considered by only one research center must submit their applications and all supporting documentation in duplicate. Applicants who wish to be considered by two different research centers must submit their applications and all supporting documentation in triplicate.

## Supplementary Information & Checklist

On a separate sheet please give the following supplementary information. Be as precise and complete as possible in describing your research experience in order to enable reviewers to match your experience with the laboratories current projects. (A standard curriculum vitae, supplemented if necessary to cover all items listed below, is acceptable provided that refereed articles are listed separately from lesser publications.)

1. Colleges attended, with dates of attendance and degrees received, field, and titles of theses and dissertations.
2. Chronology of professional employment and significant academic and professional activities.
3. List of publications. List refereed journal articles separately from reports, abstracts, paper in conference proceedings, etc.
4. Research experience.
5. Courses taught.
6. List of current contract or grant activities from June 1993 to May 1994. Please include title, funding source, funds per year, principal investigator, and the percentage of time charged to the contract or grant in the last year.  
(Please note that item 6 is used only for statistical purposes in regards to summer program application.)

Send completed application in duplicate or triplicate to:

NAVY-ASEE FACULTY RESEARCH PROGRAMS DIRECTOR  
1818 N Street, N.W., Suite 600  
Washington, DC 20036

Direct inquires to:  
(202) 331-3525  
(202) 331-3500

Deadline for receipt of Summer Faculty Application and all supporting materials: January 14, 1993.

Offers of appointment will be made during March 1994.

Individuals may apply to more than one summer faculty program (NAVY, NASA, DOE, AIR FORCE)  
but may accept only one appointment per summer.



**Application Form**  
ONLY U.S. CITIZENS ARE ELIGIBLE

**U.S. Navy-ASEE Summer Faculty Research Program**  
Application Deadline: January 14, 1994

**U.S. Navy-ASEE Sabbatical Leave Program**  
Application Deadline: January 1, April 1, July 1, October 1

Application form and supporting documents must be submitted in duplicate.

Name \_\_\_\_\_  
(Last) (First) (Middle)

Present Position \_\_\_\_\_ Department \_\_\_\_\_  
(Title)

Institution \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Home Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Home Phone \_\_\_\_\_ Office Phone \_\_\_\_\_

Social Security Number\* \_\_\_\_\_

Place of Birth \_\_\_\_\_ Date of Birth\* \_\_\_\_\_ Citizenship \_\_\_\_\_  
(If Naturalized, Supply INS #)

Highest Academic Degree \_\_\_\_\_ Field \_\_\_\_\_

School \_\_\_\_\_ Year \_\_\_\_\_

If you hold a Ph.D. or equivalent degree, list the name of institution and department awarding the degree; chairman's name and telephone number; and Ph.D. or equivalent dissertation director's name and telephone number: \_\_\_\_\_

\_\_\_\_\_

If you do not hold a doctorate, are you working toward that degree? \_\_\_\_\_

Date expected \_\_\_\_\_ Institution and Department \_\_\_\_\_

Special Field of Knowledge \_\_\_\_\_

\_\_\_\_\_

Field of Present Research Activity \_\_\_\_\_

\_\_\_\_\_

For Sabbatical Leave Application—Proposed Duration and Dates \_\_\_\_\_

Please review information in inside pages and list in order of preference (and/or your qualifications) the research center and field of work in which you would like to be placed if awarded an appointment. Applicants who wish to be considered by a second research center should submit a third copy of the application to ASEE.

(1) Research Center \_\_\_\_\_ Research Interest \_\_\_\_\_

(2) Research Center \_\_\_\_\_ Research Interest \_\_\_\_\_

Please indicate if you have previously participated in ASEE-Sponsored Summer Faculty Program(s).

Where \_\_\_\_\_ When \_\_\_\_\_

\*Requested in order to expedite any security clearance which may be required.

OFFICE USE ONLY: Appointed to \_\_\_\_\_

*Applicants should be aware that stipend payments from other federal funding sources including research grants and contracts may not be accepted during the ten weeks tenure of a summer faculty appointment or during a sabbatical leave appointment.*

# Naval Medical Research and Development Command

## Naval Health Research Center

San Diego, CA

NHRC's mission is the health and physical readiness of the Navy and Marine Corps through basic and applied research in areas that include behavioral psychobiology, cognitive psychophysiology, environmental medicine, ergonomics research, and health psychology.

**Behavioral and physiological responses during sustained performance:** This investigation focuses on evaluating levels of performance during stressed states due to sleep loss, fatigue, and variations in work/sleep schedules, and also assesses the recuperative effects of sleep in relation to length of sleep and time of day when sleep occurs. The goal is to develop work/sleep schedules that maintain optimum performance during sustained military operations.

**Epidemiology and disease surveillance in Naval personnel:** Studies include the etiology, distribution, and long-term course of disease and injury in Naval populations. Special topics of interest are the occurrence of human immuno-deficiency virus (HIV); occupational and environmental associations with disease; the etiology, diagnosis, treatment, and disposition of psychiatric disorders; and demographic, personality and life-style risk factors in chronic disease.

**Neuroelectric and neuromagnetic assessment and cognitive performance:** Studies primarily utilize electrophysiological methods to evaluate changes in attentional resources and decision-making processes. The goal is to utilize EEG spectral analysis, evoked potentials, and the steady-state response as indicators of changes in performance. Current topics of interest include investigating the cognitive performance effects of increased gravitational force and multimodal information processing. This methodology is also applied to clinical studies investigating cognitive performance in recovering alcoholics and schizophrenics.

**Performance enhancement research under extreme environments:** Current efforts involve laboratory and field studies of the effects of sleep deprivation, continuous heavy physical work, heat and cold stress, fatigue, jet-lag, and emotional reactions to stress on biochemical and musculoskeletal systems, and on cognitive and physical performance, as measured by state-of-the-art technologies. The goal is to develop methods for measuring and enhancing human performance in extreme environments.

**Physical fitness and job performance:** This research focuses on exercise physiology; specifically, the relationships between physical fitness and job performance, and the various underlying factors that are involved (e.g., biochemical and life-style variables, and environmental tolerance).

**Psychopharmacological techniques to enhance human performance:** Laboratory and field studies are conducted to evaluate the effects of pharmacologic agents on sleep electrophysiology, daytime arousal level, and cognitive psychomotor performance. Agents of interest include sedative hypnotics, stimulants, and certain dietary constituents. The goals of these studies include developing psychopharmacological techniques to augment and maintain human effectiveness during sleep loss and after transport across time zones.

## Naval Aerospace Medical Research Laboratory

Pensacola, FL

Programs emphasize research in performance based biomedical standards for naval aircrewmembers, performance assessment and enhancement, protection from environmental hazards and treatment of casualties associated with naval flight operations. Facilities are available for research in physiological performance; visual, vestibular and auditory sensory systems; biological effects of electromagnetic radiation; and biochemical responses to environmental stressors. The laboratory also has facilities and animal models for assessing performance effects. The laboratory is pro-active in technology transfer and Cooperative Research and Development Agreements.

**Medical Sciences:** Research on fitness standards of air-crewmembers. Defining physiological responses to acceleration. Defining, developing, and evaluating systems, methods, and devices (e.g., night vision goggles, hearing protectors) for: assessing visual and auditory capabilities essential to aircrew performance and protecting/enhancing one's ability to see, hear, and communicate effectively and safely in operational environments; measurement of motion and its effects; combating disorientation and airsickness through the use of cockpit display technology; assessment of controller and data acquisition systems of closed-loop motion devices simulating selected flight conditions; assessment and amelioration of performance decrements associated with sustained flight operations; computer modeling of performance decrements and their impact on flight performance.

**Psychological Sciences:** Developing and evaluating models to predict: human operator performance at specific crew stations; aviator performance capabilities; effects of workload on human information processing with application to the design and development of man/machine systems and the improvement of predictor and criterion measures of aviator proficiency training.

**Bioenvironmental Sciences:** Developing methodology and devices for nearfield and farfield microwave/RF dosimetry. Research on behavioral and physiological effects of microwave and laser exposures. Development of devices that use electromagnetic energy to prevent or rewarm hypothermic casualties. Study of endocrine responses and body fluid

balance during exposure to cold or hot environments. Evaluation of biochemical markers associated with prolonged stress and immunological functions.

## Naval Medical Research Institute

Bethesda, MD

**Environmental Medicine:** Physiology of cold adaptations and pathophysiology of non-freezing cold injury.

**Biochemistry:** Mechanisms of tissue excitation and blockade, analytical biochemistry, and physio-chemical studies.

**Applied Physiology:** Cell physiology and growth factors and cellular micro-environments, tissue oxygenation, and studies of microcirculation, thermal stress, and thermal adaptation. Exercise response to respiratory loading.

**Physiological Chemistry and Biophysics:** Bacterial endotoxins and cellular metabolism, and enzymatic activation and metabolism of dihydrogen.

**Physiology and Pharmacology:** Physiology of shock and trauma. Inert gas narcosis and respiratory sensations.

**Microbiology:** Immunology and molecular biology of malaria, rickettsiae, viruses and bacterial agents of enteric diseases.

**Hyperbaric Medicine and Physiology:** Pressure and density effects on respiratory and cardiovascular physiology, gas exchange modelling, breathing apparatus design, cellular effects of hydrostatic pressure, high O<sub>2</sub> tension, and hydrogen.

**Immunology:** Immune-biology of lymphoid cells, cell-surface antigens and their role in the immune response and cell-to-cell interactions.

**Molecular and immunological Parasitology:** Malaria Vaccine Development.

## Naval Submarine Medical Research Laboratory

Groton, CT

**Auditory Science:** Research is in the areas of auditory sensation, perception, and information processing as relates to the detection and recognition of complex sounds; assessment of auditory ability; training; the effects of noise on hearing; research audiology; speech intelligibility; headphone measurement; and virtual auditory displays. Areas of operational importance include but are not limited to: sonar and sonar systems; auditory and auditory/visual displays; performance limits for human receivers of auditory or acoustic information; underwater hearing and hearing conservation.

**Vision:** Visual and perceptual problems of submariners and divers are studied, including both visual sensation and perception and cognitive performance. Current research focuses on problems of information overload and legibility of sonar, periscope, and other displays, and how best to present information on these displays. Studies are examining the use of color coding and different types of symbols. Other work involves the evaluation of navigation beacons and the study of performance in unusual environments, such as those containing atmospheric pollutants or in the presence of excessive noise. A final area of investigation addresses neuroelectric measures of attention, perception, and decision making. The techniques of dipole source localization and cortical imaging are employed.

**Biomedical Sciences:** Conducts research in decompression and pulmonary toxicity problems associated with hyperbaric saturation exposures and fitness/wellness variations associated with prolonged confinement aboard submarines. Other current projects include the study of medical conditions affecting submarine qualifications and evaluations of field clinical laboratory equipment.

## Naval Biodynamics Laboratory

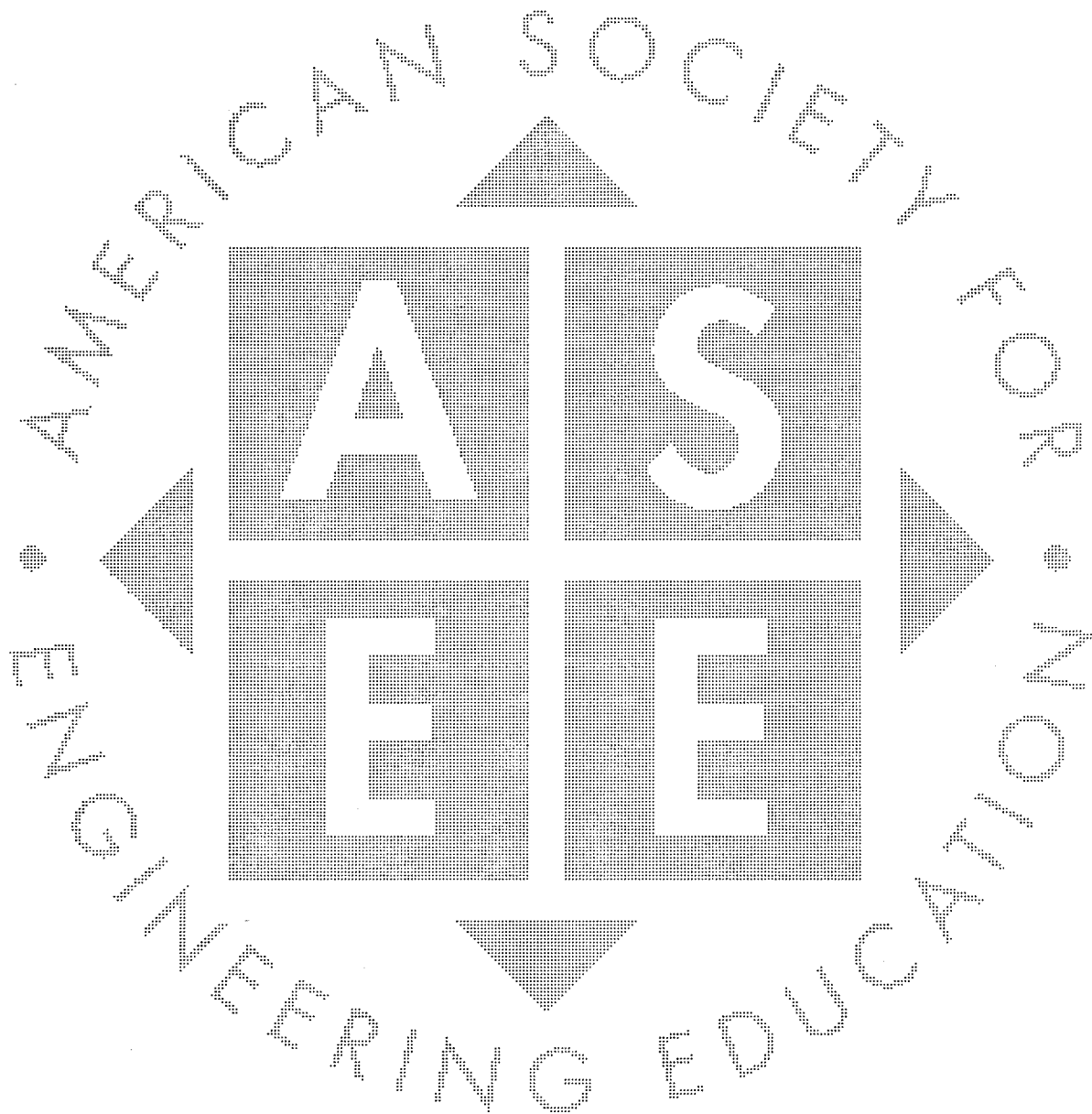
New Orleans, LA

The Naval Biodynamics Laboratory (NBDL), located on the NASA Michoud Assembly Facility in New Orleans, LA, is the primary Navy command conducting biomedical research on the physiological effects of mechanical forces and motion encountered in Naval ships and aircraft. Among NBDL's special facilities are 5 man-rated motion devices, extensive computer facilities including an evoked potential analysis system, and an automated performance test battery.

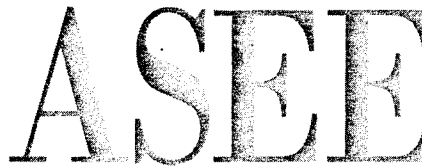
**Biomechanical models for motion and injury prediction:** Development of state-of-the-art photogrammetric and accelerometric techniques to acquire and process kinematic, mechanical, and anthropometric data from human subjects undergoing impact acceleration experiments.

**Human factors effects in motion environments:** Development of procedures, techniques, and design criteria to improve performance and protect personnel during sea and air operations; assessment of central nervous system injury, performance decrement, and motion sickness using evoked potentials and electroencephalography; and employment of cognitive behavioral desensitization techniques to enable people to function optimally in a motion environment.

# ATTACHMENT D



**Letter of Appointment**



## American Society for Engineering Education

**April 12, 1994**

**Prof. Mustafa Abushagur  
Dept. of Electrical & Comp. Engineering  
University of Alabama @ Huntsville  
Huntsville, AL 35899**

**Dear Prof. Abushagur:**

**I am pleased to confirm your appointment to a 1994 summer faculty research associateship in the Navy-ASEE Summer Faculty Research Program.**

**Under the terms of the appointment you will receive a senior level stipend of \$14,000 for ten weeks. You will be paid \$4,616.70 at the end of your first week, fifth week and ninth week. A final amount of \$150.00 will be paid upon submission of an abstract of your summer's research, evaluation questionnaire and patent form. All stipends will be paid directly to you via direct deposit. See the enclosed memorandum concerning direct deposit for further details. Please complete the enclosed authorization for direct deposit along with your acceptance form as soon as possible in order to insure the timely payment of your stipend. The stipend is also taxable.**

**Before the beginning of your 10-week appointment, the Office of Naval Research has authorized funds for you to visit the Navy center at which you'll carry out your research. The dates for this pre-program visit should be decided by you and your colleague at the Navy research center. For your pre-program site visit we will reimburse you for lodging at the government per diem rate for that area as well as meals for not more than 2 days. If you choose to drive your personal car to the research site for both the pre-program visit and your 10-week research period, we will reimburse you at the rate of 28 cents per mile up to a total not to exceed the cost of economy round-trip airfare. We cannot cover the added cost of food and lodging while you are on the way to and from the site for your 10 week period. Enclosed are the travel reimbursement forms which you must submit to ASEE in order to claim reimbursement for your allowable expenses.**

**You must use our travel agent, Connections - The Travel Company, to reserve airline tickets. Please contact me as soon as possible with the approximate dates and destinations so I may authorize your travel and provide you with the agent's telephone number. By using our travel agent, ASEE will be billed directly for your travel. You should also check with Connections Travel when comparing r/t airfare and mileage for reimbursement purposes.**

1818 N Street, N.W.  
Suite 600  
Washington, D.C. 20036  
Main (202) 331-3500  
Fax (202) 265-8504

Page 2

If you relocate in order to be closer to your R&D center, you are entitled to a \$1,000 allowance in order to help offset the expense of maintaining two residences. In order to claim this allowance, please fill out the enclosed Relocation Allowance Request form, supplying your permanent and summer addresses, and return it to me. You will be responsible for obtaining and paying for any housing you may require. The Navy center may be able to assist you in finding a suitable place to stay during your 10-week research period.

Although June 1 is the announced starting date, we are aware that this may not be compatible with all university calendars. Therefore, if necessary, you can arrange a more convenient starting date. Any Monday after May 2 and before July 11 is acceptable to ASEE, but the starting date should also be acceptable to your colleague at the Navy R&D center. We do insist that 10 continuous weeks be devoted to the summer research. As soon as you decide on a starting date, please let me know at least four weeks before you begin to allow time for accounting procedures.

Your file and pay records will be maintained at ASEE headquarters, and questions concerning your stipend and travel reimbursements should be directed to ASEE. Your colleague or the laboratory's summer program coordinator may be contacting you soon to obtain information needed for a security clearance. Because the clearance procedure is usually time consuming, please respond promptly so that it can be completed prior to your arrival date. Even though not all the research assignments require clearance, some Navy labs may deny access to certain areas (for example, the library) to uncleared participants.

To complete our official record, please sign and return the enclosed acceptance form. We must receive both the acceptance form and direct deposit form at least four (4) weeks before your start date so that your stipend can be processed. We will not pay any stipend until these forms are received. Please refer to the enclosed Administrative Check List for additional memoranda.

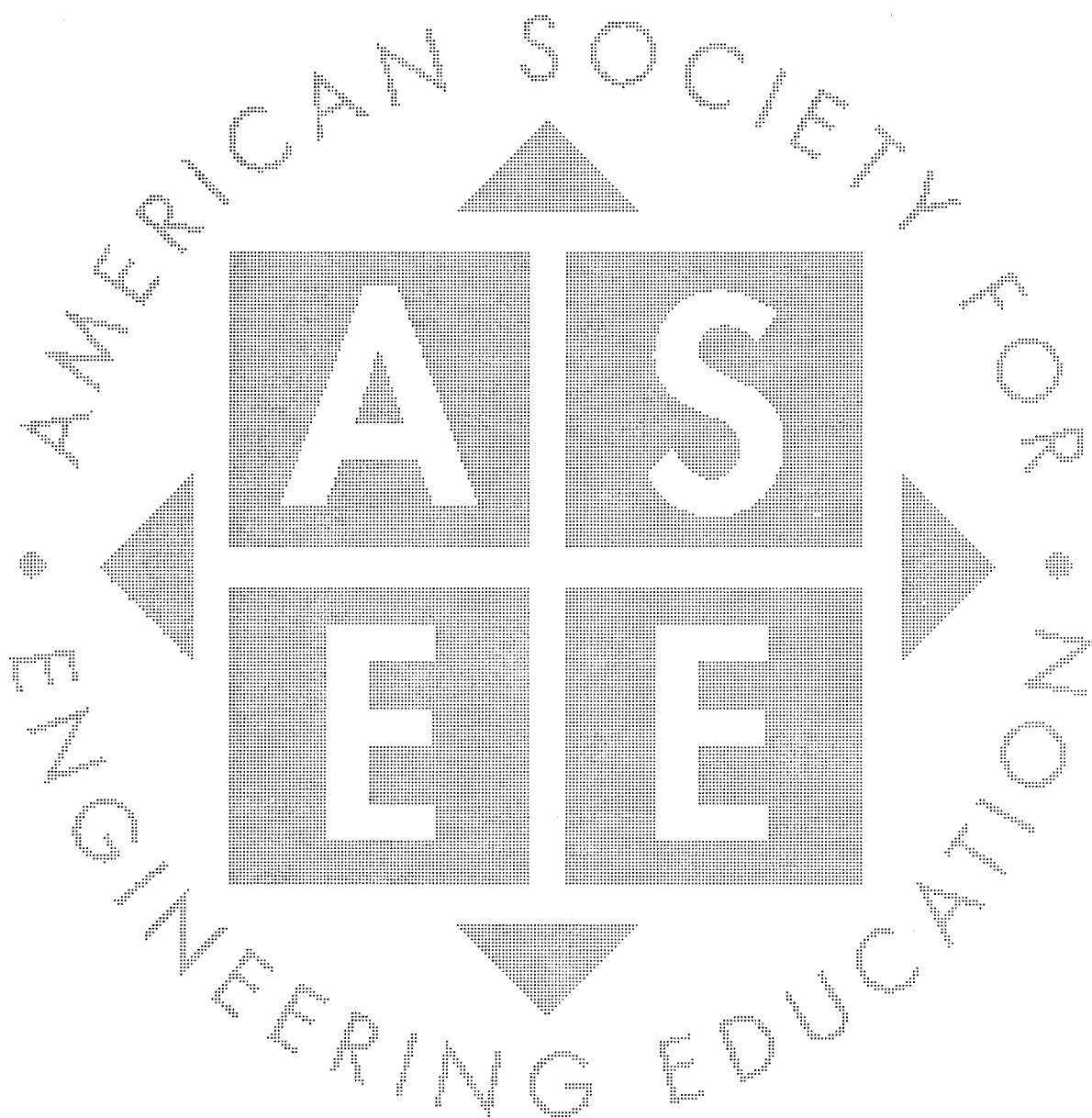
Feedback from the participants and from laboratory personnel involved in the Navy-ASEE Summer Faculty Program has been uniformly positive since the program began in 1979. I look forward to helping you enjoy a personally and professionally rewarding experience this summer.

Sincerely,

Debbie Aho  
Program Manager  
Projects Office

Enclosures

# ATTACHMENT E



**Acceptance of Appointment**

**AMERICAN SOCIETY FOR ENGINEERING EDUCATION  
1994 NAVY-ASEE SUMMER FACULTY RESEARCH  
PROGRAM**

**ACCEPTANCE OF APPOINTMENT FORM**

Name: \_\_\_\_\_

I hereby accept the ten week research appointment as described in the letter of appointment from Debbie Aho, Program Manager for ASEE of the Navy-ASEE Summer Faculty Research Program. This acceptance acknowledges that I understand the terms of the appointment specified in that letter, and that I understand the conditions set forth in the memorandum from ASEE concerning the patent rights pertaining to my participation in the 1994 Navy-ASEE Summer Faculty Research Program.

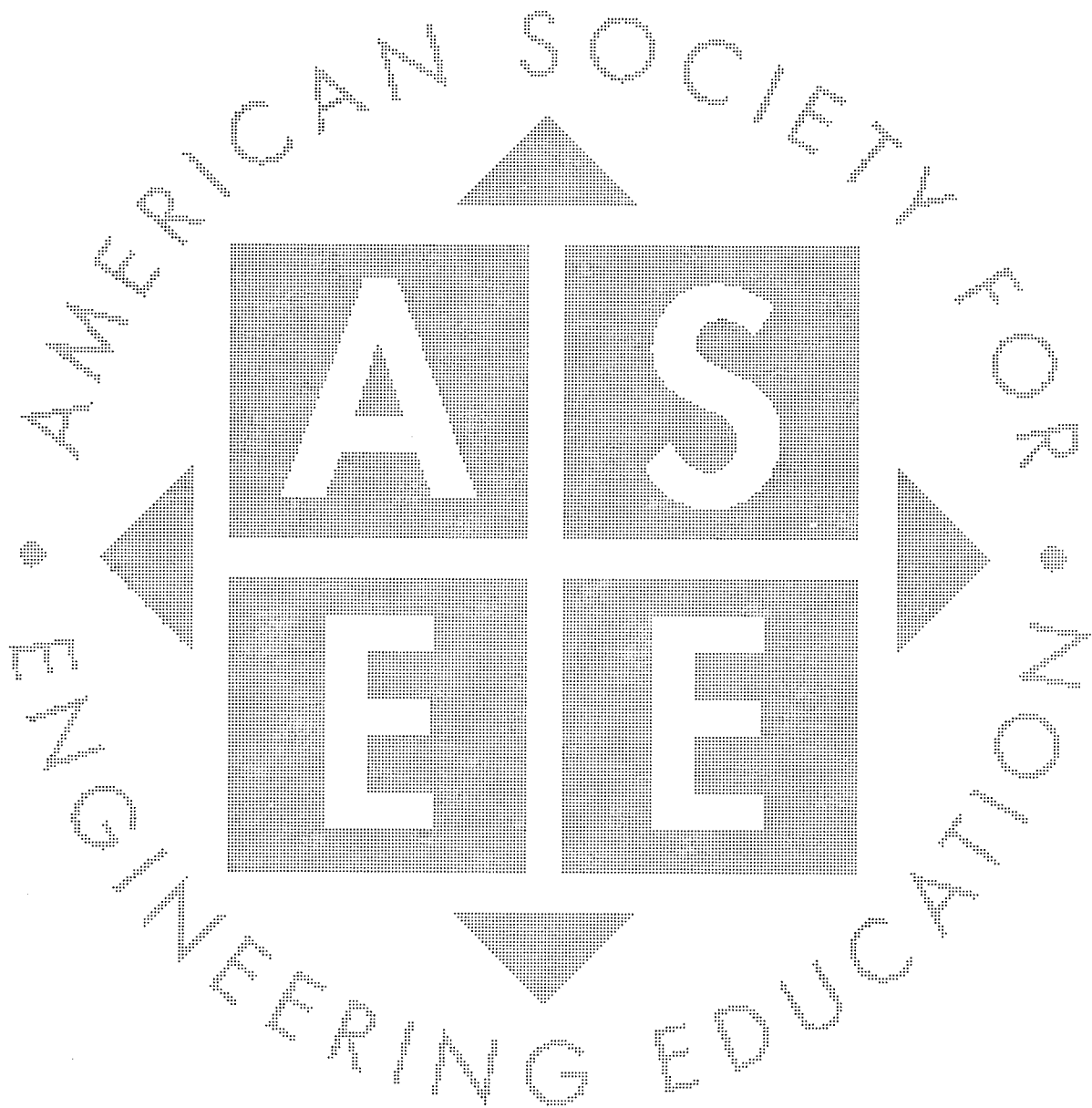
Signed: \_\_\_\_\_

**NOTE: This appointment is not a contract by the Navy or ASEE for your personal services. Your role is that of a self-employed professional who has agreed to conduct and report on research of interest both to yourself and the Navy.**

Please indicate the date you propose to start your summer research. This should be preferably on or about June 1, 1994 or a Monday as close to that date as possible.

Proposed starting date: \_\_\_\_\_

# **ATTACHMENT F**



## **Letter of Rejection**



# ASEE



## American Society for Engineering Education

April 1, 1994

Dear Applicant:

Thank you for your interest in the Navy-ASEE Summer Faculty Research Program. Over 600 highly-qualified candidates applied this year making the selection process difficult for all of the participating Navy research and development centers. Regrettably, we will be unable to offer you an appointment for the 1994 program.

Representatives of 17 Navy research centers conscientiously reviewed the applications. Final selections reflected the best possible match between the research interests of the applicants and those at the various Navy laboratories as well as the centers' budget constraints.

Please do not be discouraged because you are not among this year's selections. I speak not only for ASEE but also for the Navy personnel involved when I thank you for your commitment to and interest in Navy research. We strongly encourage you to reapply next year.

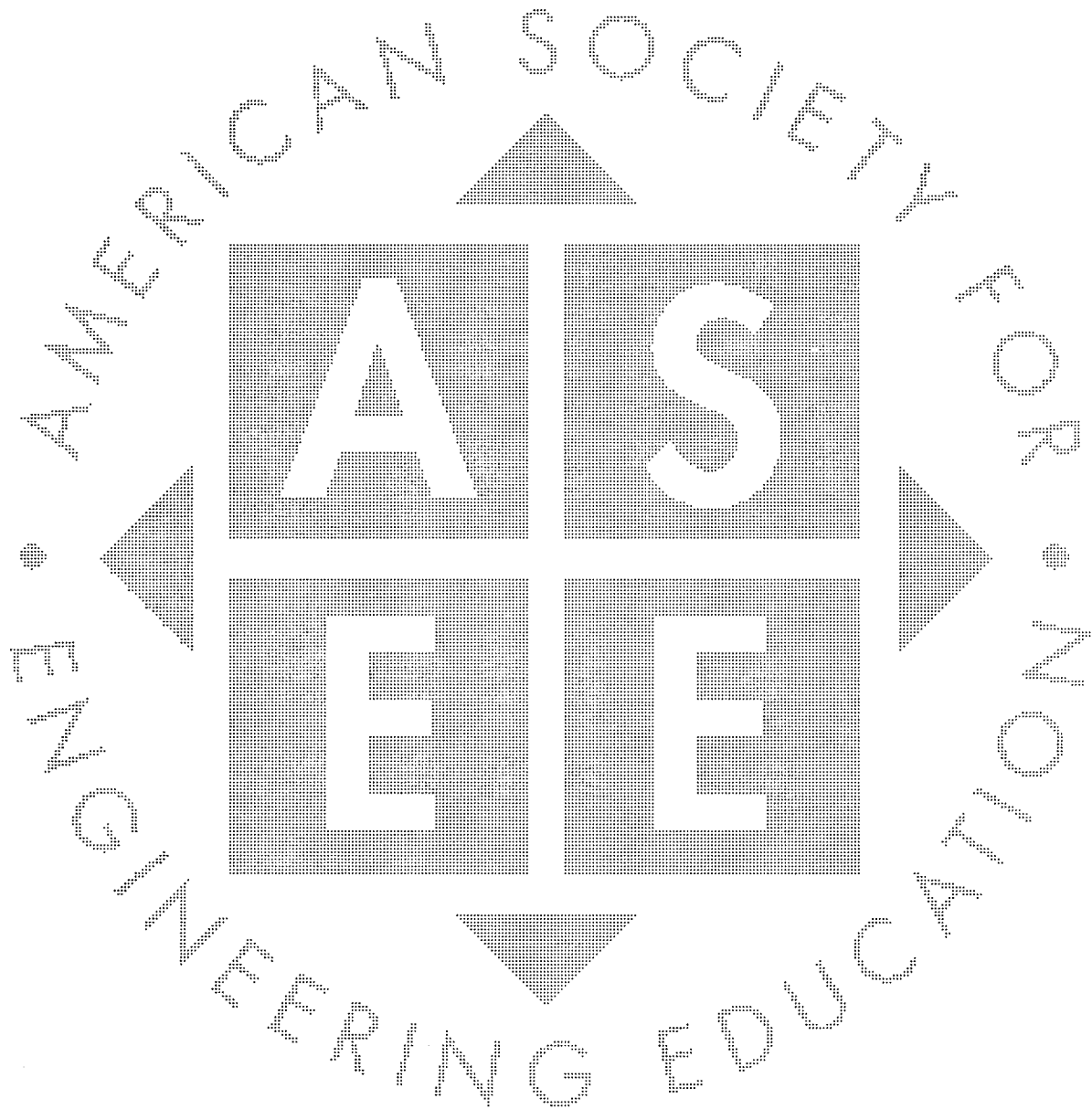
Sincerely,

A handwritten signature in cursive script, appearing to read 'Debbie Aho'.

Debbie Aho  
Program Manager  
Projects Office

1818 N Street, N.W.  
Suite 600  
Washington, D.C. 20036  
Main (202) 331-3500  
Fax (202) 265-8504

# ATTACHMENT G



**Applicant/Participant Distribution by  
Gender and Race**

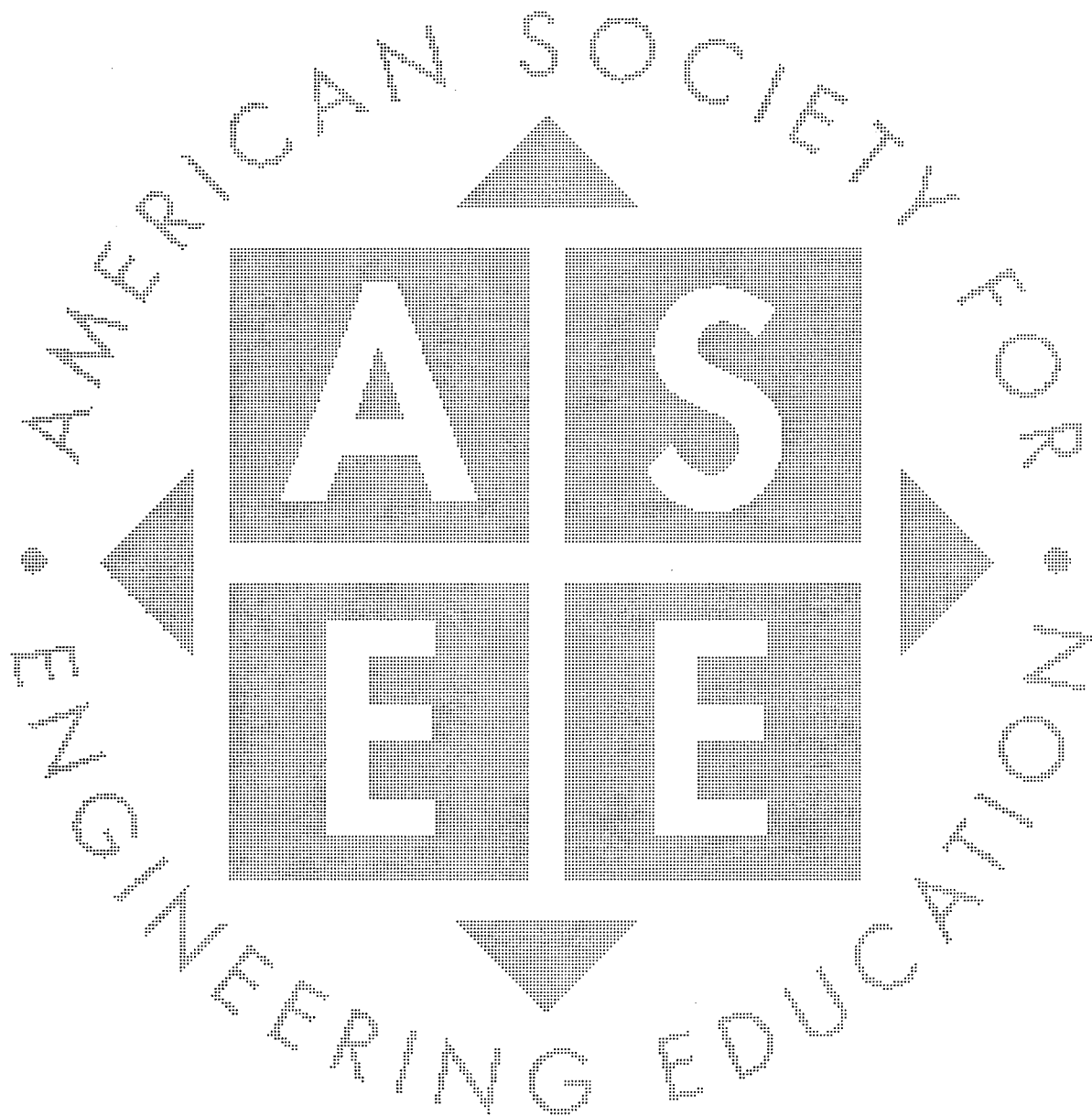
1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Total Applicant Distribution by Gender and Race

CENTER	Other		African American		Asian		Hispanic		Native American		Pacific Islander		TOTAL
	M	F	M	F	M	F	M	F	M	F	M	F	
DEOMI	13	1	5	2	0	0	1	0	1	0	0	0	23
NAMRL	5	0	0	0	2	0	0	0	0	0	0	0	7
NAWC/AD	51	3	2	0	19	0	1	0	0	0	1	0	77
NAWC/WD	18	0	1	0	4	1	2	0	0	0	0	0	26
NBL	3	0	0	1	1	0	0	0	0	0	0	0	5
NCCOSC	38	4	1	0	12	0	2	0	0	0	0	0	58
NFESC	13	1	0	0	9	0	0	0	0	0	0	0	23
NHRC	16	1	0	0	2	0	1	0	0	0	0	0	20
NMRI	6	5	1	0	7	1	0	0	0	0	0	0	20
NPRDC	20	8	4	4	4	0	1	0	0	0	0	0	41
NRL	114	13	9	0	27	1	1	0	0	0	0	0	165
NSMRL	2	1	0	0	0	0	0	0	0	0	0	0	3
NSWC/CD	25	2	1	0	8	2	0	0	0	0	0	0	38
NSWC/CSS	18	0	2	0	7	0	1	0	0	0	0	0	28
NSWC/DD	26	0	1	0	5	0	1	0	0	0	0	0	33
NTSC	17	4	0	1	2	0	3	0	0	0	0	0	27
NUWC	35	1	1	0	3	0	0	0	0	0	0	0	40
TOTAL	420	44	28	8	112	5	14	0	1	1	1	0	634

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Total Participant Distribution by Gender and Race

CENTER	Other		African American		Asian		Hispanic		Native American		Pacific Islander		TOTAL
	M	F	M	F	M	F	M	F	M	F	M	F	
DEOMI	5	0	1	2	0	0	0	0	0	0	0	0	8
NAMRL	0	0	0	0	1	0	0	0	0	0	0	0	1
NAWC/AD	22	1	0	0	8	0	1	0	0	0	1	0	33
NAWC/WD	4	0	0	0	0	1	0	0	0	0	0	0	5
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0
NCCOSC	12	1	0	0	7	0	1	0	0	0	0	0	21
NFESC	5	0	0	0	3	0	0	0	0	0	0	0	8
NHRC	4	0	0	0	1	0	0	0	0	0	0	0	5
NMRI	1	0	1	0	1	0	0	0	0	0	0	0	3
NPRDC	4	0	3	1	0	0	0	0	0	0	0	0	8
NRL	24	6	3	0	6	0	0	0	0	0	0	0	39
NSMRL	1	0	0	0	0	0	0	0	0	0	0	0	1
NSWC/CD	11	1	0	0	2	0	0	0	0	0	0	0	14
NSWC/CSS	3	0	0	0	0	0	0	0	0	0	0	0	3
NSWC/DD	4	0	0	0	0	0	0	0	0	0	0	0	4
NTSC	3	0	0	0	0	0	2	0	0	0	0	0	5
NUWC	9	0	1	0	0	0	0	0	0	0	0	0	10
TOTAL	112	9	9	3	29	1	4	0	0	0	1	0	168

# ATTACHMENT H



**Applicant/Participant Distribution by  
Discipline and Laboratory**

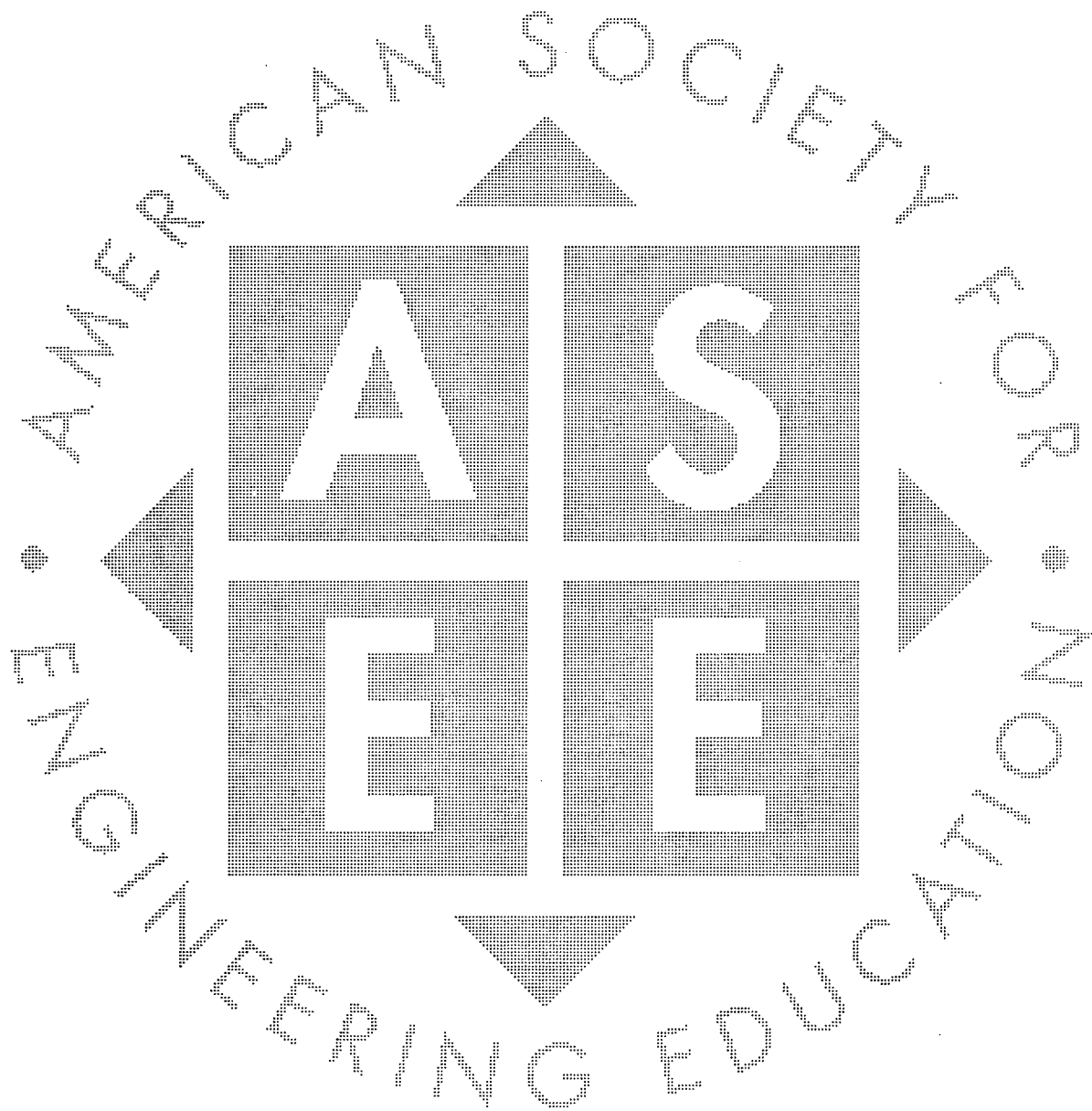
1994 NAVY-ASSEE SUMMER FACULTY RESEARCH PROGRAM  
Total Applicant Distribution by Discipline and Laboratory

Disciplines	DEOMI	NAMRL	NAWC/AD	NAWCWD	NBL	NCCOSC	NFESC	NHRC	NMRI	NPRDC	NRL	NSMRL	NSWC/CD	NSWC/CSS	NSWC/DD	NTSC	NUWC	TOTAL
Physical Sciences	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Astronomy	0	0	2	6	1	0	0	1	3	0	24	0	0	0	0	1	2	40
Chemistry	0	1	9	4	0	9	0	0	0	0	48	1	1	5	4	1	5	88
Physics																		
Math & Comp. Sciences	0	0	3	1	0	8	1	0	0	2	5	0	0	0	4	5	1	30
Computer Science	0	0	1	0	0	1	0	0	0	2	2	0	1	0	0	1	0	8
Information Systems	0	0	8	4	0	9	2	2	0	5	9	0	3	2	5	4	3	56
Mathematics																		
Environmental Sciences	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Atmospheric Sciences	0	0	0	0	0	1	2	0	0	0	5	0	0	0	0	0	0	8
Geological Sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oceanography																		
Engineering	0	0	4	3	0	0	0	1	0	0	6	0	2	3	0	1	2	22
Aerospace	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural	0	1	3	0	1	0	0	1	0	0	2	0	0	0	0	0	0	8
Bioengineering	0	0	0	0	0	0	2	1	1	0	4	0	0	0	1	0	0	9
Chemical	0	0	1	0	0	0	8	0	0	0	1	0	2	0	0	0	4	16
Civil	0	2	16	2	0	18	0	0	0	1	30	0	10	11	14	3	11	118
Electrical	0	1	4	0	0	4	1	0	0	1	1	0	2	0	1	0	2	17
Engineering Science	0	0	7	0	1	0	0	2	0	3	1	0	2	2	1	5	0	22
Industrial	0	1	10	5	2	3	2	0	0	1	12	0	14	5	2	0	8	65
Mechanical	0	0	7	0	0	0	0	0	0	0	4	0	1	0	1	0	1	14
Materials Science	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
Nuclear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oceanographic																		
Life Sciences	0	1	0	0	0	0	0	0	7	0	2	0	0	0	0	0	0	10
Biological Sciences	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
Environmental Biology	0	0	0	0	0	1	0	4	7	1	0	0	0	0	0	0	0	13
Medical Sciences	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	0	6
Microbiology																		
Behavioral Sciences	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Counseling	0	0	1	1	0	0	1	0	0	5	1	0	0	0	0	2	0	11
Education	7	0	1	0	0	2	0	9	0	13	1	2	0	0	0	2	1	38
Psychology	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
Sociology																		
Social Sciences	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Anthropology	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
History	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Linguistics/Speech																		
Business	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Accounting	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Economics	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Finance	5	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	9
Management																		
Total	23	7	77	26	5	58	23	20	20	41	165	3	38	28	33	27	40	634

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Total Participant Distribution by Discipline and Laboratory

Disciplines	DEOMI	NAMRL	NAWC/AD	NAWC/WVD	NBL	NCCOSC	NPESC	NHRC	NMRI	NPRDC	NRL	NSMRL	NSWC/CD	NSWC/CSS	NSWC/DD	NTSC	NUWC	TOTAL
<b>Physical Sciences</b>																		
Astronomy	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Chemistry	0	0	2	2	0	0	0	0	0	0	8	0	0	0	1	0	1	14
Physics	0	0	5	1	0	4	0	0	0	0	12	0	1	0	0	0	1	24
<b>Math &amp; Comp. Sciences</b>																		
Computer Science	0	0	1	0	0	3	0	0	0	0	0	0	0	0	1	2	0	7
Information Systems	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Mathematics	0	0	3	0	0	2	1	1	0	0	1	0	1	0	2	0	0	11
<b>Environmental Sciences</b>																		
Atmospheric Sciences	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Geological Sciences	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	3
Oceanography	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Engineering</b>																		
Aerospace	0	0	1	1	0	0	0	0	0	0	2	0	1	0	0	0	0	5
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bioengineering	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
Chemical	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Civil	0	0	1	0	0	0	3	1	0	0	0	0	0	0	0	0	0	5
Electrical	0	0	6	0	0	8	0	0	0	1	7	0	0	0	0	3	3	37
Engineering Science	0	0	2	0	0	1	1	0	0	1	0	0	1	0	0	0	1	7
Industrial	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Mechanical	0	1	4	1	0	0	0	0	0	0	1	0	1	0	0	0	3	11
Material Sciences	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4
Nuclear	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Oceanographic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Life Sciences</b>																		
Biological Sciences	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3
Environmental Biology	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
Medical Sciences	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Microbiology	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	3
<b>Behavioral Sciences</b>																		
Counseling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Education	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Psychology	3	0	1	0	0	1	0	2	0	1	1	1	0	0	0	0	1	11
Sociology	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
<b>Social Sciences</b>																		
Anthropology	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
History	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4
Linguistics/Speech	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Business</b>																		
Accounting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Economics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Management	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	8	1	33	5	0	21	8	5	3	8	39	1	14	3	4	5	10	168

# ATTACHMENT I



**Applicants/Participants from HBCU/MI**



1994 ASEE-NAVY SUMMER FACULTY RESEARCH PROGRAM  
HBCU/MI Applicants & Participants by Laboratory and University

Last Name	University	Lab	Participant
Barnes	Norfolk State University	DEOMI	Yes
Bell	Lincoln University	DEOMI	
Brassell	Laredo Community College	DEOMI	
Eaton	Florida A&M University	DEOMI	Yes
Regalado	El Paso Community College	DEOMI	
Simpkins	Barstow College	DEOMI	
Simpson	North Carolina Central University	DEOMI	Yes
St. Pierre	Morgan State University	DEOMI	
Patra	University of Puerto Rico	NAMRL	Yes
Qureshi	Rust College	NAMRL	
Aleamar	University of Puerto Rico	NAWC/AD	Yes
Farahmand	Texas A&M @ Kingsville	NAWC/AD	Yes
Fettahlioglu	NY Institute of Technology	NAWC/AD	Yes
Garcia-Otero	Fort Valley State College	NAWC/AD	Yes
Gayen	Stevens Institute of Technology	NAWC/AD	Yes
George	Florida A&M University	NAWC/AD	Yes
Goldberg	Saint Mary's University	NAWC/AD	Yes
Hou	Howard University	NAWC/AD	Yes
Hughes	Kentucky State University	NAWC/AD	Yes
Mehta	University of Puerto Rico	NAWC/AD	Yes
Sastri	NYC Technical College	NAWC/AD	Yes
Wernicki	NY Institute of Technology	NAWC/AD	Yes
Williams	Mississippi Valley State University	NAWC/AD	Yes
Benumof	CUNY @ Staten Island	NAWC/WD	Yes
Eaton	Fort Valley State	NAWC/WD	
Jones	North Carolina A&T State University	NAWC/WD	
McLauchlan	Texas A&M @ Kingsville	NAWC/WD	Yes
Wei	Southern University	NAWC/WD	Yes
Chriss	Southern University	NBL	
Chen	New Mexico State University	NCCOSC	Yes
Hashemi	Howard University	NCCOSC	Yes
Hira	Jarvis Christian College	NCCOSC	Yes
Lopez-Lopez	Southwestern College	NCCOSC	Yes
Moghaddasi	City University of New York	NCCOSC	Yes
Randhawa	Southern University	NCCOSC	Yes
Shadaram	University of Texas @ El Paso	NCCOSC	Yes
Johanson	University of the Pacific	NFESC	
Narang	Tuskegee University	NFESC	
Norris	North Carolina A&T State University	NFESC	Yes
Ramsamooj	California State University @ Fullerton	NFESC	Yes
Viswanath	South Carolina State University	NFESC	Yes
Arafat	Rust College	NHRC	
Putch	California State University @ Fullerton	NHRC	Yes

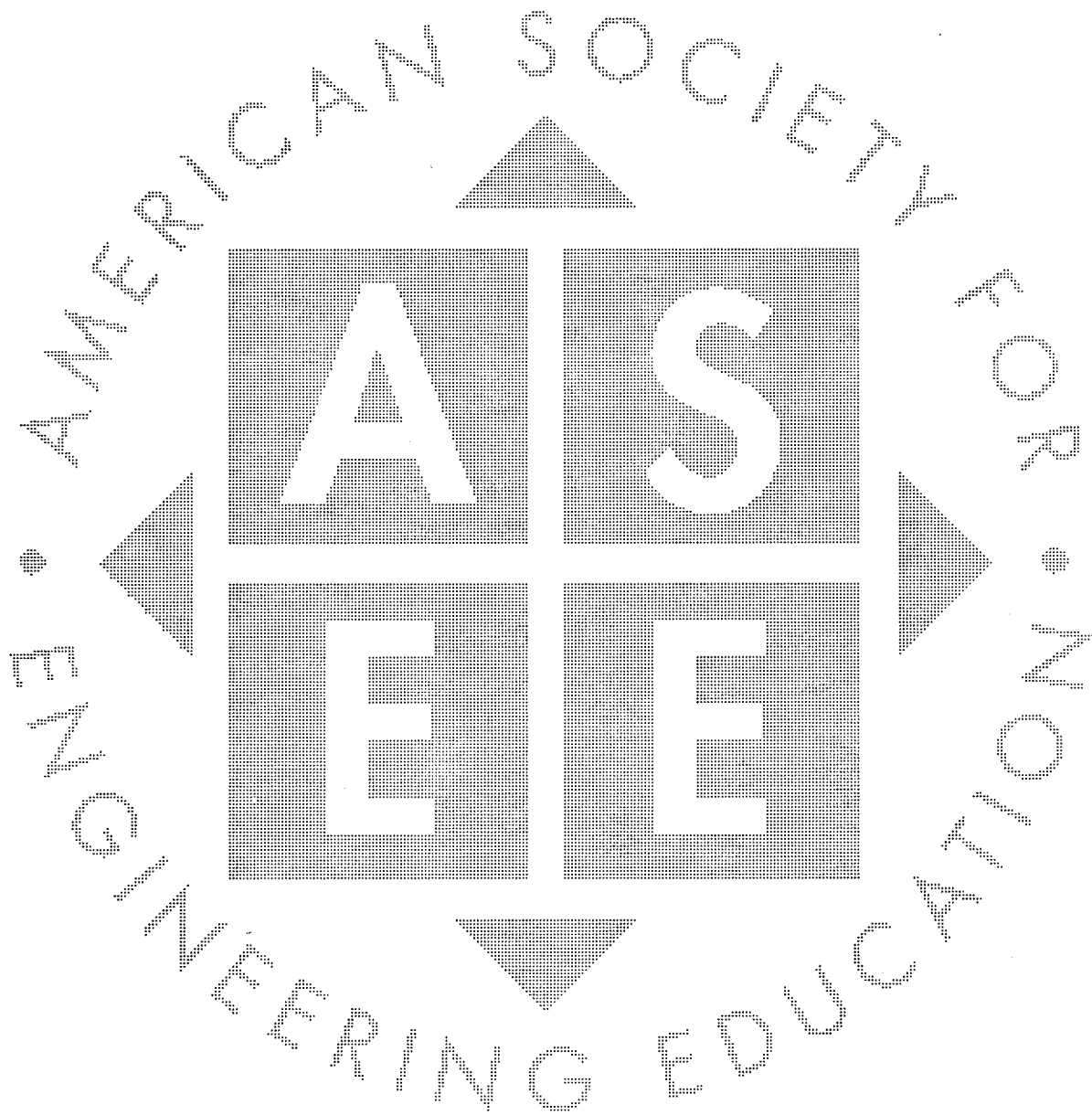
Garber	West Virginia State College	NMRI	Yes
Kassim	Howard University of Medicine	NMRI	Yes
Denley	Norfolk State University	NPRDC	Yes
Ealy	Tougaloo College	NPRDC	
Franco	Texas A&M University @ Kingsville	NPRDC	
Hicks	Morris College	NPRDC	
Hill	California State University @ Los Angeles	NPRDC	Yes
Long	Norfolk State University	NPRDC	
Pardee	Riverside Community College	NPRDC	Yes
Thomas	University of Arkansas @ Pine Bluff	NPRDC	Yes
Tobias	City University of New York	NPRDC	Yes
Woods	South Carolina State University	NPRDC	Yes
Woods	Tougaloo College	NPRDC	Yes
Yuster	Queensborough Community College	NPRDC	Yes
Adebayo	University of the District of Columbia	NRL	Yes
Akundi	Xavier University	NRL	Yes
Bhar	University of the District of Columbia	NRL	Yes
Bishop	University of Texas @ Austin	NRL	
Butcher	Howard University	NRL	Yes
Choudhury	Howard University	NRL	
Darby	University of the District of Columbia	NRL	Yes
Derman	NYC Technical College	NRL	Yes
Fan	Howard University	NRL	
Hall	Johnson C. Smith University	NRL	
Haque	Alcorn State University	NRL	
Heard, Jr.	John Jay College of Criminal Justice	NRL	
Jishi	California State University @ Los Angeles	NRL	
Johnson	Saint Paul's College	NRL	
Krishna	South Carolina State University	NRL	
Lawless	Paine College	NRL	Yes
Mania, Jr.	Kentucky State University	NRL	Yes
Massa	CUNY @ Hunter College	NRL	Yes
Nottingham	University of the District of Columbia	NRL	
Stearns	Howard University	NRL	
Suson	Texas A&M University @ Kingsville	NRL	
Tamma	Mississippi Valley State University	NRL	
Terrell	Grambling State University	NRL	
Thompson	Polytechnic University	NRL	Yes
Williams	Morgan State University	NRL	Yes
Collier	South Carolina State University	NSMRL	Yes
Boyd	University of Maryland @ Eastern Shore	NSWC/CD	
Jang	Shaw University	NSWC/CD	Yes
Ramchandani	California State University @ Los Angeles	NSWC/CD	Yes
Sarper	University of Southern Colorado	NSWC/CD	Yes
Foster	Florida A&M University	NSWC/CSS	
Gross	Florida A&M University	NSWC/CSS	Yes
Owusu	Florida A&M University	NSWC/CSS	
Simmons, Jr.	Florida A&M University	NSWC/CSS	
Almallahi	Prairie View A&M University	NSWC/DD	
Leach	Howard University	NSWC/DD	

Rogers	Polytechnic University	NSWC/DD	Yes
Wang	North Carolina A&T State University	NSWC/DD	
Koehler	University of the District of Columbia	NTSC	
Ortiz	University of Puerto Rico @ Mayaguez	NTSC	Yes
Kuria	Tuskegee University	NUWC	Yes
Raj	City University of New York	NUWC	
Williamson	Illinois Institute of Technology	NUWC	

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
HBCU/MI Applicant & Participant Distribution by Laboratory

Center	Applicants	Participants
DEOMI	8	3
NAMRL	2	1
NAWC-AD	13	13
NAWC-WD	5	3
NBL	1	0
NCCOSC	7	7
NFESC	5	3
NHRC	2	1
NMRI	2	2
NPRDC	12	8
NRL	25	11
NSMRL	1	1
NSWC-CD	4	3
NSWC-CSS	4	1
NSWC-DD	4	1
NTSC	2	1
NUWC	3	1
Total	100	60

# ATTACHMENT J



**Participants' Department & University**

# 1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM

## Participants by Department and University

Last Name	Department	University
Abushagur	Electrical & Computer Engineering	University of Alabama
Adebayo	Mechanical Engineering	University of the District of Columbia
Aggarwal	Mechanical Engineering	University of Illinois @ Chicago
Akundi	Physics & Engineering	Xavier University
Aleamar	Physics	University of Puerto Rico
Angus	Mathematics	Claremont Graduate School
Arnall	Physical Therapy	Northern Arizona University
Arterburn	Civil & Mechanical Engineering	United States Military Academy
Barnes	Sociology	Norfolk State University
Beale	Electrical & Computer Engineering	George Mason University
Beliveau	Civil & Environmental Engineering	University of Vermont
Benumof	Applied Sciences	CUNY @ Staten Island
Bernard	Mechanical Engineering	University of Maryland
Bhar	Electrical Engineering	University of the District of Columbia
Boerner	Electrical & Computer Engineering	University of Illinois @ Chicago
Borgiotti	Electrical & Computer Engineering	George Washington University
Buckley	Physical Science	Cameron University
Bull	Aerospace Engineering	California State University @ Long Beach
Bush	Electrical & Computer Engineering	Wilkes University
Butcher	Chemistry	Howard University
Byrne	Electrical Engineering	University of South Alabama
Carpenter	Civil Engineering & Mechanics	University of South Florida
Chassaing	Electrical Engineering	Roger Williams University
Chen	Physics	New Mexico State University
Coleman	Electrical Engineering	Michigan Technological University
Coll	Electrical & Computer Engineering	Drexel University
Collier	Psychology & Sociology	South Carolina State University
Corson	Electrical & Computer Engineering	University of Illinois @ Chicago
Curran	Chemistry	University of Massachusetts @ Amherst
Darby	Electrical Engineering	University of the District of Columbia
Dayhoff	Institute for Systems Research	University of Maryland
Dean	Physics	Georgia Southern University
Denley	Political Science	Norfolk State University
Derman	Electromechanical Engineering Technology	New York City Technical College
Eaton	Black Archives Research Center & Museum	Florida A&M University
Edgar	Chemical Engineering	Kansas State University
Es-Said	Mechanical Engineering	Loyola Marymont University
Faas	Geology	Lafayette College
Farahmand	Mechanical & Industrial Engineering	Texas A&M University @ Kingsville
Fettahlioglu	Mechanical & Aerospace Engineering	New York Institute of Technology
Fishwick	Computer Science	University of Florida
Friedli	Chemistry & Physics	Middle Tennessee State University
Gandhi	Electrical & Computer Engineering	Villanova University
Garber	Chemistry	West Virginia State University
Garcia-Otero	Cooperative Developmental Energy Program	Fort Valley State College
Gayen	Physics & Engineering Physics	Stevens Institute of Technology
George	Electrical Engineering	Florida A&M University
Goldberg	Engineering	Saint Mary's University
Gonzalez	Electrical & Computer Engineering	University of Central Florida
Gray	Graduate School of Education	Fordham University
Grosch	Psychology	Colgate University

Gross	Electrical Engineering	Florida A&M University
Grosshans	Mathematics	West Chester University
Harihar	Physics	University of Massachusetts @ Lowell
Harris	Psychology	Mankato State University
Hashemi	Systems & Computer Science	Howard University
Hensgen	Electrical & Computer Engineering	University of Cincinnati
Herwig	Microbiology	University of Washington
Hill	Management	California State University @ Los Angeles
Hira	Physics	Jarvis Christian College
Holman	Chemistry	Western Kentucky University
Hou	Mechanical Engineering	Howard University
Howard	Nuclear Engineering & Engineering Physics	Rensselaer Polytechnic Institute
Hrebien	Electrical & Computer Engineering	Drexel University
Huberman	Physics	Occidental College
Hughes	Computer Science	Kentucky State University
Hui	Mathematical Sciences	San Diego State University
Hutchens	Electrical & Computer Engineering	Oklahoma State University
Ikossi-Anastasiou	Electrical & Computer Engineering	Louisiana State University
Jang	Mathematics	Shaw University
Jen	Mechanical Engineering	Villanova University
Johnson	Natural Sciences	LeTourneau University
Jones	Mechanical Engineering	Villanova University
Kamman	Mechanical & Aeronautical Engineering	Western Michigan University
Kasilingam	Electrical & Computer Engineering	University of Massachusetts @ Dartmouth
Kassim	Microbiology	Howard University of Medicine
Kaufman	Physics	University of Rhode Island
Kidd	Biology	Wesley College
Kim	Astronomy, Geosciences & Physics	Saddleback College
Knouse	Management	University of Southwestern Louisiana
Kobus	Psychology	San Diego State University
Kuria	Mechanical Engineering	Tuskegee University
Landis	Psychology	University of Mississippi
Langford	Civil & Mechanical Engineering	United States Military Academy
Lawless	Mathematics & Social Psychology	Paine College
Lea	Mathematics	University of North Carolina
Lefkowitz	Computer Science	Temple University
Lewis	Geology	Auburn University
Lindell	Psychology	Michigan State University
Lindner	Electrical Engineering	Virginia Technological University
Lipscomb	Mathematics	Mary Washington College
Lopez-Lopez	Physics	Southwestern College
Mania, Jr.	Physics	Kentucky State University
Marshall	Mechanical Engineering	University of Iowa
Massa	Chemistry & Physics	CUNY @ Hunter College
Mathews	Civil Engineering	Kansas State University
McIntyre	Ocean Engineering	Florida Atlantic University
McLauchlan	Mechanical & Industrial Engineering	Texas A&M University @ Kingsville
McShane	Mathematics	Northern Arizona University
Medhurst	Physical Science	Marymont University
Mehta	Chemical Engineering	University of Puerto Rico
Miller	Chemistry & Biochemistry	University of Maryland
Moghaddasi	Electrical Engineering	City University of New York
Moore	Sociology	SUNY @ Buffalo
Nagem	Mechanical Engineering	Boston University
Nelson	Electrical Engineering	North Dakota State University
Ng	Applied Medical Sciences	University of Southern Maine

Niebuhr	Management
Norris	Civil Engineering
Olinger	Mechanical Engineering
Ortiz	Electrical & Computer Engineering
Ownby	Ceramic Engineering
Pandey	Physics & Astronomy
Pardee	Applied Technology
Patra	General Engineering
Pearson	Materials Science & Engineering
Pendergrass	Electrical & Computer Engineering
Petrasko	Electrical & Computer Engineering
Prasanna	Electrical Engineering Systems
Putcha	Civil Engineering
Rabbany	Engineering
Raghavan	Electrical & Computer Engineering
Rahman	Civil Engineering
Raichel	Mechanical Engineering
Ramchandani	Electrical Engineering
Ramsamooj	Civil Engineering
Randhawa	Electrical Engineering Technology
Richie	Electrical & Computer Engineering
Rogers	Mathematics
Root	Mathematical Sciences
Saiedpazouki	Electrical & Computer Engineering
Sarper	Engineering
Sastri	Mechanical Engineering Technology
Scerbo	Psychology
Shadaram	Electrical Engineering
Shaw	Mathematics
Sheu	Electrical & Computer Engineering
Shih	Material Engineering
Simpson	Sociology
Singh	Electrical & Computer Engineering
Singhal	Engineering
Soumekh	Electrical & Computer Engineering
Stalick	Chemistry
Stratton	Biology
Swearingen	Mechanical Engineering
Thomas	Education & Health
Thompson	Physics
Tiller	Civil Engineering
Tobias	School of Education
Tyagi	Physics
Uberall	Physics
Viswanath	Mathematics & Computer Science
Vizzini	Aerospace Engineering
Wallner	Chemistry
Wang	Information Technology
Wasyliwskyj	Electrical & Computer Engineering
Wei	Chemistry
Welch	Computer & Information Science
Wernicki	Electrical Engineering
Williams	Physics
Williams	Mathematics & Computer Science
Wilson	Electrical Technology
Witulski	Electrical & Computer Engineering

Auburn University  
 North Carolina A&T State University  
 Worcester Polytechnic Institute  
 University of Puerto Rico @ Mayaguez  
 University of Missouri @ Rolla  
 University of Southern Mississippi  
 Riverside Community College  
 University of Puerto Rico  
 Lehigh University  
 University of Massachusetts @ Dartmouth  
 University of Central Florida  
 University of Southern California  
 California State University @ Fullerton  
 Hofstra University  
 Northeastern University  
 North Carolina State University  
 Cooper Union  
 California State University @ Los Angeles  
 California State University @ Fullerton  
 Southern University  
 Central Florida University  
 Polytechnic University  
 San Diego State University  
 Villanova University  
 University of Southern Colorado  
 New York City Technical College  
 Old Dominion University  
 University of Texas @ El Paso  
 Virginia Technological University  
 University of California @ Irvine  
 Drexel University  
 North Carolina Central University  
 University of Nevada @ Las Vegas  
 Arizona State University  
 SUNY @ Buffalo  
 George Mason University  
 Furman University  
 University of Kansas  
 University of Arkansas @ Pine Bluff  
 Polytechnic University  
 Georgia Institute of Technology  
 CUNY @ City College  
 Drexel University  
 Catholic University of America  
 South Carolina State University  
 University of Maryland  
 Missouri Western State College  
 Massachusetts Institute of Technology  
 George Washington University  
 Southern University  
 New Jersey Institute of Technology  
 New York Institute of Technology  
 Morgan State University  
 Mississippi Valley State University  
 Mohawk Valley Community College  
 University of Arizona

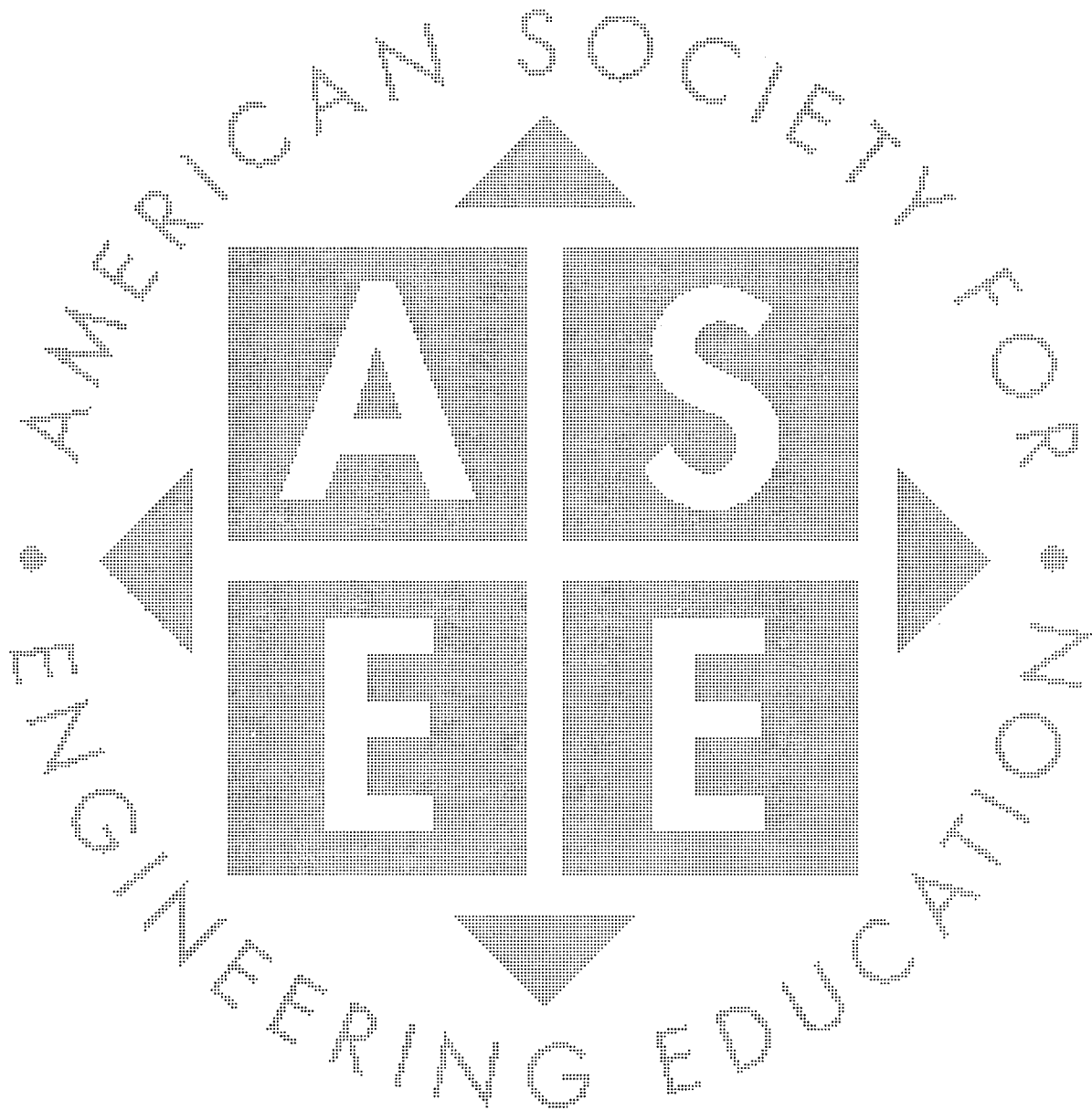


Woods  
Woods  
Yuster  
Zhang  
Zietz

History  
History & Political Science  
Electrical & Computer Engineeirng  
Mechanical Engineering  
Mathematics & Computer Science

Tougaloo College  
South Carolina State University  
Queensborough Community College of CUNY  
University of Maryland  
Drexel University

# ATTACHMENT K



**Participants by University and State**

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Participants by University and State

Last Name	University	State
Abushagur	University of Alabama	AL
Adebayo	University of the District of Columbia	DC
Aggarwal	University of Illinois @ Chicago	IL
Akundi	Xavier University	LA
Aleamar	University of Puerto Rico	PR
Angus	Claremont Graduate School	CA
Arnall	Northern Arizona University	AZ
Arterburn	United States Military Academy	NY
Barnes	Norfolk State University	VA
Beale	George Mason University	VA
Beliveau	University of Vermont	VT
Benumof	CUNY @ Staten Island	NY
Bernard	University of Maryland	MD
Bhar	University of the District of Columbia	DC
Boerner	University of Illinois @ Chicago	IL
Borgiotti	George Washington University	DC
Buckley	Cameron University	OK
Bull	California State University @ Long Beach	CA
Bush	Wilkes University	PA
Butcher	Howard University	DC
Byrne	University of South Alabama	AL
Carpenter	University of South Florida	FL
Chassaing	Roger Williams University	RI
Chen	New Mexico State University	NM
Coleman	Michigan Technological University	MI
Coll	Drexel University	PA
Collier	South Carolina State University	SC
Corson	University of Illinois @ Chicago	IL
Curran	University of Massachusetts @ Amherst	MA
Darby	University of the District of Columbia	DC
Dayhoff	University of Maryland	MD
Dean	Georgia Southern University	GA
Denley	Norfolk State University	VA
Derman	New York City Technical College	NY
Eaton	Florida A&M University	FL
Edgar	Kansas State University	KS
Es-Said	Loyola Marymont University	CA
Faas	Lafayette College	PA
Farahmand	Texas A&M University @ Kingsville	TX
Fettahlioglu	New York Institute of Technology	NY
Fishwick	University of Florida	FL
Friedli	Middle Tennessee State University	TN
Gandhi	Villanova University	PA
Garber	West Virginia State University	WV
Garcia-Otero	Fort Valley State College	GA
Gayen	Stevens Institute of Technology	NJ
George	Florida A&M University	FL
Goldberg	Saint Mary's University	TX
Gonzalez	University of Central Florida	FL
Gray	Fordham University	NY
Grosch	Colgate University	NY

Gross	Florida A&M University	FL
Grosshans	West Chester University	PA
Harihar	University of Massachusetts @ Lowell	MA
Harris	Mankato State University	MN
Hashemi	Howard University	DC
Hensgen	University of Cincinnati	OH
Herwig	University of Washington	WA
Hill	California State University @ Los Angeles	CA
Hira	Jarvis Christian College	TX
Holman	Western Kentucky University	KY
Hou	Howard University	DC
Howard	Rensselaer Polytechnic Institute	NY
Hrebien	Drexel University	PA
Huberman	Occidental College	CA
Hughes	Kentucky State University	KY
Hui	San Diego State University	CA
Hutchens	Oklahoma State University	OK
Ikossi-Anastasiou	Louisiana State University	LA
Jang	Shaw University	NC
Jen	Villanova University	PA
Johnson	LeTourneau University	TX
Jones	Villanova University	PA
Kamman	Western Michigan University	MI
Kasilingam	University of Massachusetts @ Dartmouth	MA
Kassim	Howard University of Medicine	DC
Kaufman	University of Rhode Island	RI
Kidd	Wesley College	DE
Kim	Saddleback College	CA
Knouse	University of Southwestern Louisiana	LA
Kobus	San Diego State University	CA
Kuria	Tuskegee University	AL
Landis	University of Mississippi	MS
Langford	United States Military Academy	NY
Lawless	Paine College	GA
Lea	University of North Carolina	NC
Lefkovitz	Temple University	PA
Lewis	Auburn University	AL
Lindell	Michigan State University	MI
Lindner	Virginia Technological University	VA
Lipscomb	Mary Washington College	VA
Lopez-Lopez	Southwestern College	CA
Mania, Jr.	Kentucky State University	KY
Marshall	University of Iowa	IA
Massa	CUNY @ Hunter College	NY
Mathews	Kansas State University	KS
McIntyre	Florida Atlantic University	FL
McLauchlan	Texas A&M University @ Kingsville	TX
McShane	Northern Arizona University	AZ
Medhurst	Marymont University	VA
Mehta	University of Puerto Rico	PR
Miller	University of Maryland	MD
Moghaddasi	City University of New York	NY
Moore	SUNY @ Buffalo	NY
Nagem	Boston Univeristy	MA
Nelson	North Dakota State University	ND
Ng	University of Southern Maine	ME

Niebuhr	Auburn University	AL
Norris	North Carolina A&T State University	NC
Olinger	Worcester Polytechnic Institute	MA
Ortiz	University of Puerto Rico @ Mayaguez	PR
Ownby	University of Missouri @ Rolla	MO
Pandey	University of Southern Mississippi	MS
Pardee	Riverside Community College	CA
Patra	University of Puerto Rico	PR
Pearson	Lehigh University	PA
Pendergrass	University of Massachusetts @ Dartmouth	MA
Petrasko	University of Central Florida	FL
Prasanna	University of Southern California	CA
Putch	California State University @ Fullerton	CA
Rabbany	Hofstra University	NY
Raghavan	Northeastern University	MA
Rahman	North Carolina State University	NC
Raichel	Cooper Union	NY
Ramchandani	California State University @ Los Angeles	CA
Ramsamooj	California State University @ Fullerton	CA
Randhawa	Southern University	LA
Richie	Central Florida University	FL
Rogers	Polytechnic University	NY
Root	San Diego State University	CA
Saiedpazouki	Villanova University	PA
Sarper	University of Southern Colorado	CO
Sastri	New York City Technical College	NY
Scerbo	Old Dominion University	VA
Shadaram	University of Texas @ El Paso	TX
Shaw	Virginia Technological University	VA
Sheu	University of California @ Irvine	CA
Shih	Drexel University	PA
Simpson	North Carolina Central University	NC
Singh	University of Nevada @ Las Vegas	NV
Singhal	Arizona State University	AZ
Soumekh	SUNY @ Buffalo	NY
Stalick	George Mason University	VA
Stratton	Furman University	SC
Swearingen	University of Kansas	KS
Thomas	University of Arkansas @ Pine Bluff	AR
Thompson	Polytechnic University	NY
Tiller	Georgia Institute of Technology	GA
Tobias	CUNY @ City College	NY
Tyagi	Drexel University	PA
Uberall	Catholic University of America	DC
Viswanath	South Carolina State University	SC
Vizzini	University of Maryland	MD
Wallner	Missouri Western State College	MO
Wang	Massachusetts Institute of Technology	MA
Wasyliwskyj	George Washington University	DC
Wei	Southern University	LA
Welch	New jersey Institute of Technology	NJ
Wernicki	New York Institute of Technology	NY
Williams	Morgan State University	MD
Williams	Mississippi Valley State University	MS
Wilson	Mohawk Valley Community College	NY
Witulski	University of Arizona	AZ

Woods  
Woods  
Yuster  
Zhang  
Zietz

Tougaloo College  
South Carolina State University  
Queensborough Community College of CUNY  
University of Maryland  
Drexel University

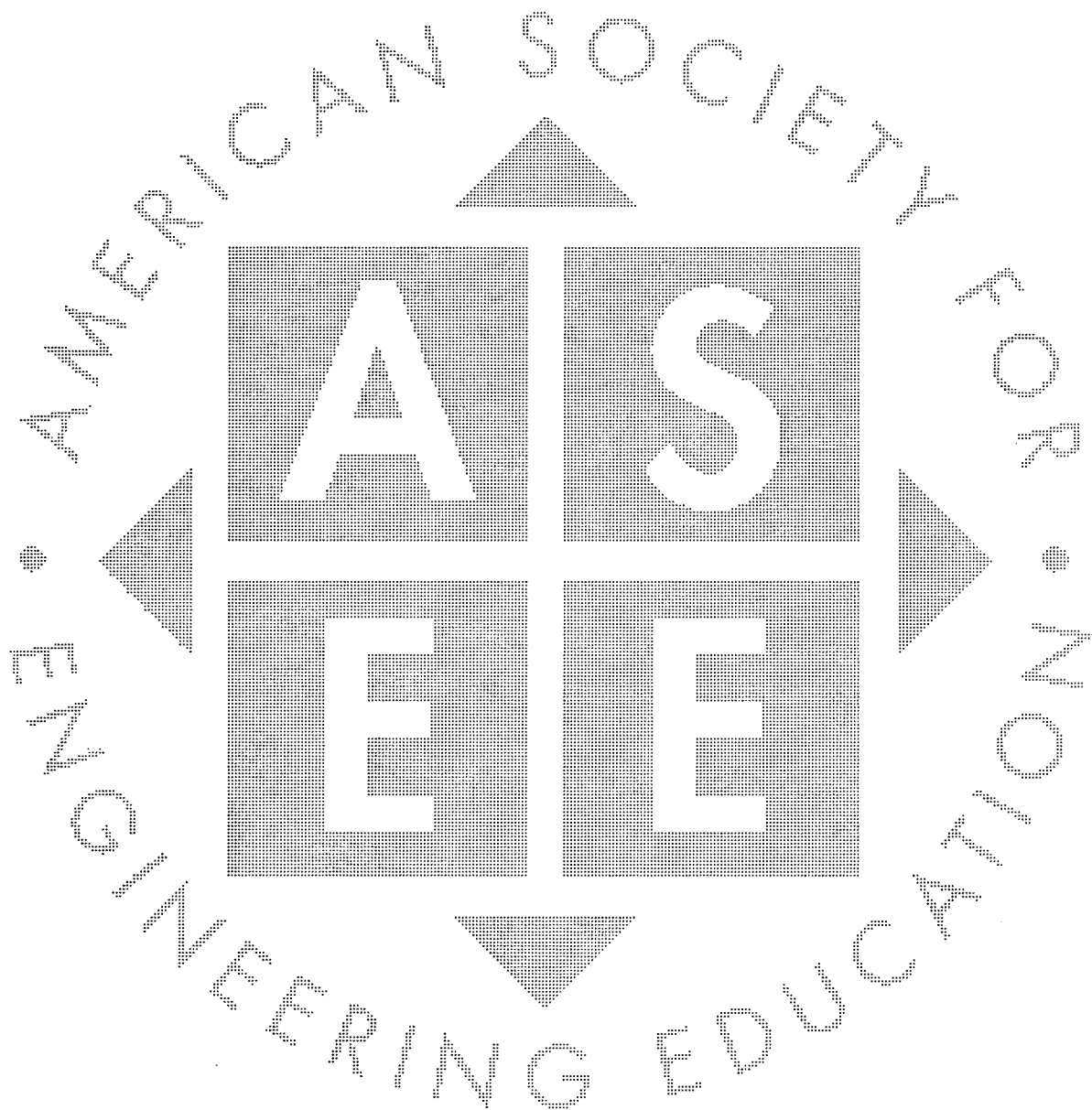
MS  
SC  
NY  
MD  
PA

1994 NAVY-ASEE SUMMER FACULTY RESEARCH PROGRAM  
Participant Distribution by State

State	Number of Participants
Alabama	5
Arkansas	1
Arizona	4
California	16
Colorado	1
District of Columbia	10
Delaware	1
Florida	9
Georgia	4
Iowa	1
Illinois	3
Kansas	3
Kentucky	3
Louisiana	5
Massachusetts	8
Maryland	6
Maine	1
Michigan	3
Minnesota	1
Missouri	2
Mississippi	4
North Carolina	5
North Dakota	1
New Jersey	2
New Mexico	1
Nevada	1
New York	21
Ohio	1
Oklahoma	2
Pennsylvania	14
Puerto Rico	4
Rhode Island	2
South Carolina	4
Tennessee	1
Texas	6
Virginia	9
Vermont	1
Washington	1
West Virginia	1
Total	168

Note: 37 states were represented as well as the  
District of Columbia and Puerto Rico.

# ATTACHMENT L



## Evaluation Questionnaire



**AMERICAN SOCIETY FOR ENGINEERING EDUCATION**

**Navy-ASEE Summer Faculty Research Program**

**Evaluation Questionnaire**

(Faculty Fellows should respond to the following questions)

Name: \_\_\_\_\_

Permanent Mailing Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Home Institution: \_\_\_\_\_

Navy Center and (Laboratory) Division: \_\_\_\_\_

\_\_\_\_\_

Name of Research Colleague: \_\_\_\_\_

Brief Descriptive Title of Research Topic: \_\_\_\_\_

\_\_\_\_\_

## **A. PROGRAM OBJECTIVES**

1. Do you feel that you were engaged in research of importance to the mission of the laboratory and the Navy?

Yes \_\_\_\_\_

No \_\_\_\_\_

2. Is it likely that you will use your summer experience as a basis for continuing research of interest to the Navy at your institution under its or other sponsorship?

Yes \_\_\_\_\_

No \_\_\_\_\_

Uncertain \_\_\_\_\_

3. Are you interested in maintaining a continuing research relationship with the professional peers with whom you collaborated in the laboratory this summer?

Yes \_\_\_\_\_

No \_\_\_\_\_

## **B. PERSONAL PROFESSIONAL DEVELOPMENT**

1. To what extent do you think your research interests and capabilities have been affected by this summer's experience? (You may check more than one)

Reinvigorated \_\_\_\_\_

Redirected \_\_\_\_\_

Advanced \_\_\_\_\_

Barely maintained \_\_\_\_\_

Unaffected \_\_\_\_\_

2. How strongly would you recommend this program to your faculty colleagues as a favorable means of advancing their personal professional development as researchers and teachers?

Positively \_\_\_\_\_

Not at all \_\_\_\_\_

3. How will this experience affect your teaching in ways that will be valuable to your students? (You may check more than one)

By integrating new information into courses \_\_\_\_\_

By starting new courses \_\_\_\_\_

By sharing research experiences \_\_\_\_\_

By revealing opportunities for future employment in government agencies \_\_\_\_\_

By deepening your own grasp and enthusiasm \_\_\_\_\_

Will affect my teaching little, if at all \_\_\_\_\_

#### C. STIPEND

1. Please indicate your annual salary at your home institution. The purpose of this question is to determine equitable stipends for next year's summer program as well as our postdoctoral fellowships.

\$ \_\_\_\_\_ per \_\_\_\_\_

#### D. ADMINISTRATION

1. How did you learn about the Program? (Please check appropriate response)

\_\_\_\_\_ Received announcement in the mail.

\_\_\_\_\_ Read about it in a professional publication.

\_\_\_\_\_ Heard about it from a colleague.

\_\_\_\_\_ Other (explain). \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Did you also apply to other summer faculty programs?

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

\_\_\_\_\_ DOE

\_\_\_\_\_ NASA

\_\_\_\_\_ Air Force

\_\_\_\_\_ Army

3. Did you receive an additional offer of appointment from one or more of the above?

If so, please indicate from which. Yes \_\_\_\_\_ No \_\_\_\_\_

\_\_\_\_\_

4. Did you develop new areas of research interest as a result of your interaction with your Center and laboratory colleagues?

Many \_\_\_\_\_

A few \_\_\_\_\_

None \_\_\_\_\_

5. Did you receive any informal or formal instructions about submission of research proposals to continue your research at your home institution?

Yes \_\_\_\_\_

No \_\_\_\_\_

6. Did your assignment require a security clearance?

Yes \_\_\_\_\_

No \_\_\_\_\_

If "yes", did you actually receive a security clearance?

Yes \_\_\_\_\_

No \_\_\_\_\_

Did this requirement pose any obstacle to achieving your research goal for the summer?

If yes, please explain.

\_\_\_\_\_

\_\_\_\_\_

**E. AMERICAN SOCIETY FOR ENGINEERING EDUCATION (ASEE)  
MEMBERSHIP INFORMATION**

1. Are you currently a member of the American Society for Engineering Education?

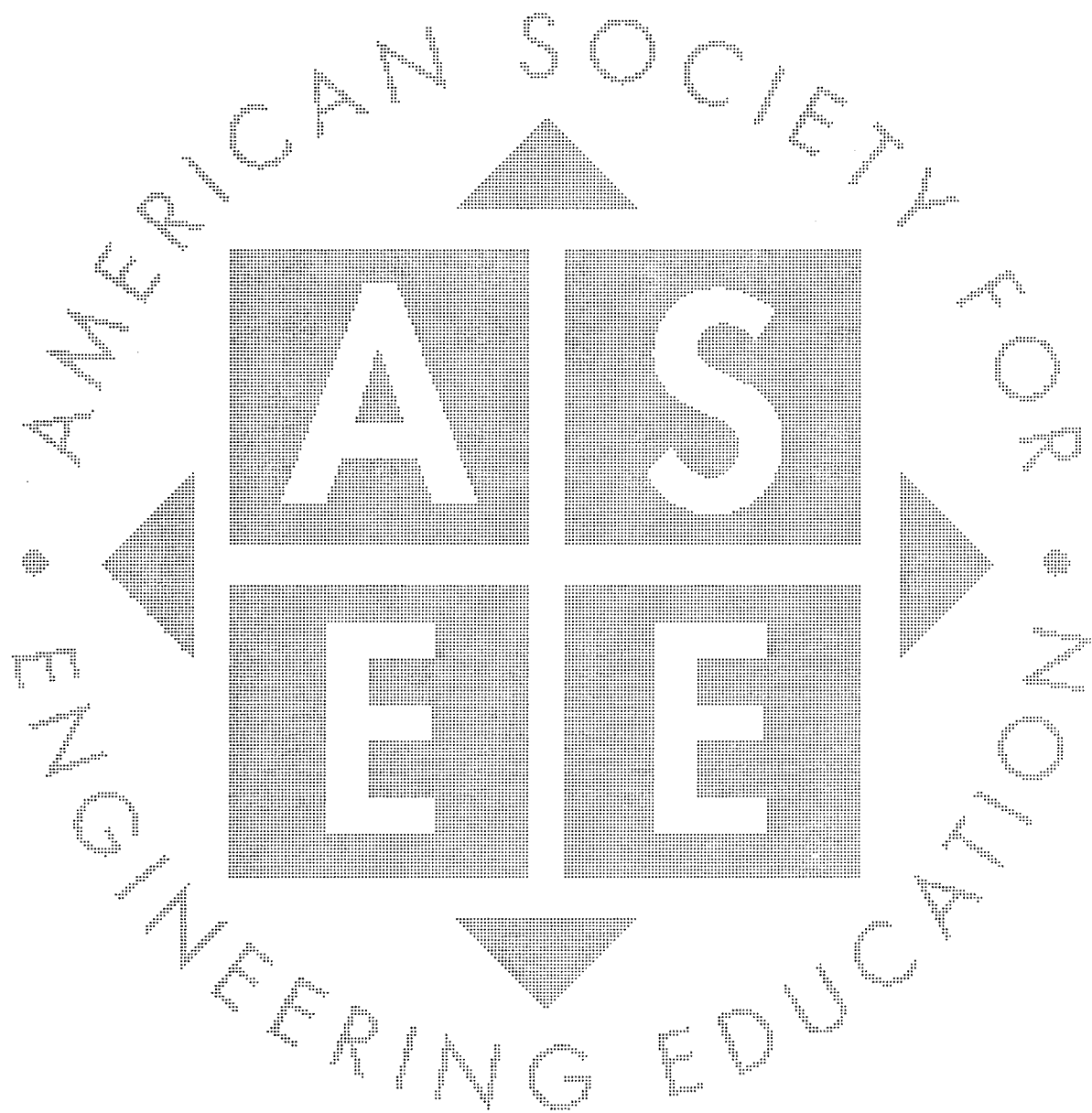
Yes \_\_\_\_\_ No \_\_\_\_\_

2. Would you like to receive information pertaining to membership in the ASEE?

Yes \_\_\_\_\_ No \_\_\_\_\_

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# ATTACHMENT M



## Summary of Evaluation Questionnaire

## **A. PROGRAM OBJECTIVES**

1. Do you feel that you were engaged in research of importance to the mission of the laboratory and the Navy?

Yes 151

No 0

2. Is it likely that you will use your summer experience as a basis for continuing research of interest to the Navy at your institution under its or other sponsorship?

Yes 129

No 1

Uncertain 21

3. Are you interested in maintaining a continuing research relationship with the professional peers with whom you collaborated in the laboratory this summer?

Yes 151

No 0

## **B. PERSONAL PROFESSIONAL DEVELOPMENT**

1. To what extent do you think your research interests and capabilities have been affected by this summer's experience? (You may check more than one)

Reinvigorated 87

Redirected 57

Advanced 121

Barely maintained 0

Unaffected 1



2. How strongly would you recommend this program to your faculty colleagues as a favorable means of advancing their personal professional development as researchers and teachers?

Positively 151

Not at all 0

3. How will this experience affect your teaching in ways that will be valuable to your students? (You may check more than one)

By integrating new information into courses 124

By starting new courses 19

By sharing research experiences 134

By revealing opportunities for future employment in government agencies 84

By deepening your own grasp and enthusiasm 82

Will affect my teaching little, if at all 3

#### C. STIPEND

1. Please indicate your annual salary at your home institution. The purpose of this question is to determine equitable stipends for next year's summer program as well as our postdoctoral fellowships.

\$ \_\_\_\_\_ per \_\_\_\_\_

#### D. ADMINISTRATION

1. How did you learn about the Program? (Please check appropriate response)

91 Received announcement in the mail.

7 Read about it in a professional publication.

30 Heard about it from a colleague.

38 Other (explain). \_\_\_\_\_

---

---

2. Did you also apply to other summer faculty programs?

49 Yes

102 No

5 DOE

34 NASA

12 Air Force

22 Army

3. Did you receive an additional offer of appointment from one or more of the above?  
If so, please indicate from which. Yes 17 No 90

---

4. Did you develop new areas of research interest as a result of your interaction with your Center and laboratory colleagues?

Many 31

A few 113

None 6

5. Did you receive any informal or formal instructions about submission of research proposals to continue your research at your home institution?

Yes 73

No 76

6. Did your assignment require a security clearance?

Yes 44

No 107

If "yes", did you actually receive a security clearance?

Yes 39

No 19

Did this requirement pose any obstacle to achieving your research goal for the summer?

If yes, please explain.

---

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**E. AMERICAN SOCIETY FOR ENGINEERING EDUCATION (ASEE)  
MEMBERSHIP INFORMATION**

1. Are you currently a member of the American Society for Engineering Education?

Yes 45

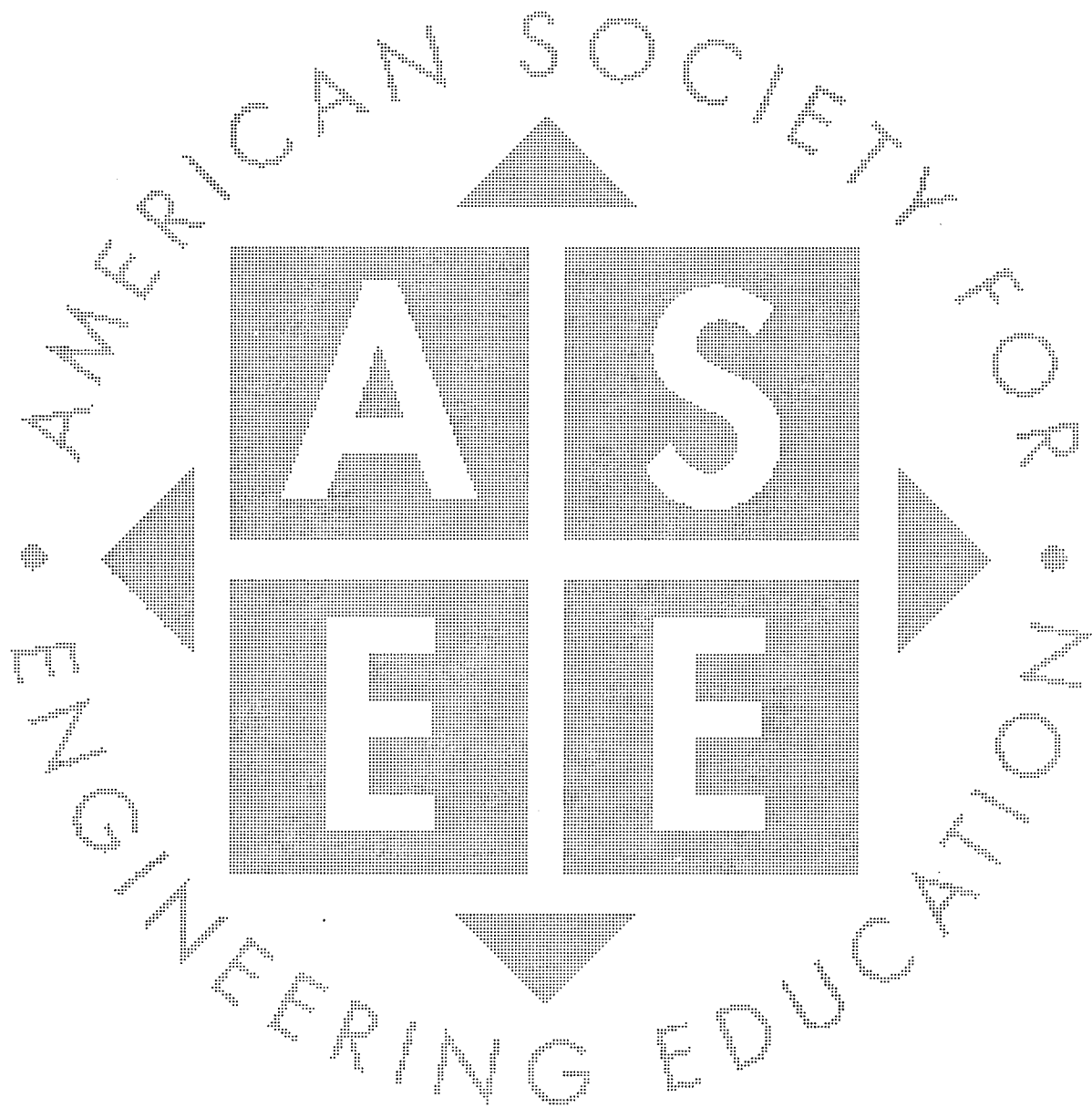
No 96

2. Would you like to receive information pertaining to membership in the ASEE?

Yes 70

No 43

# ATTACHMENT N



## Summary of Sabbatical Leave Program Particiapnts

## **Summary of Sabbatical Leave Program Participants on Tenure in 1994**

### **Dr. Bilal M. Ayyub**

Associate Professor  
Department of Civil Engineering  
University of Maryland  
College Park, MD

**Host Laboratory: Naval Surface Warfare Center, Carderock Division**

**Tenure Period: August 1993 to August 1994**

#### **Research Plan**

The research will be in areas that are related to the probabilistic analysis of marine structures. Activities will be in support of ongoing research projects at the Naval Surface Warfare Center (NSWC-CS), Carderock Division, under the leadership of Mr. Jeffrey Beach (Code 1730). Some suggested research areas may include reliability assessment of ship structures with ambiguity and vagueness in failure, reliability-based design, efficient reliability assessment techniques, limiting the tails of probability distributions in the extreme value analyses of wave pressure, and statistical treatment of experimental data. Also, providing any needed support to other ongoing research projects at the NSWC-CD in the general areas of probabilistic analysis, and uncertainty modeling and analysis.

### **Dr. Laura K. Thompson**

Professor  
Department of Biology  
Furman University  
Greenville, SC

**Host Laboratory: Naval Research Laboratory**

**Tenure Period: August 1993 to May 1994**

#### **Research Plan**

Polyester polyurethane comprises the matrix of many naval aircraft paints which require hazardous organic solvents for removal. Soil bacteria were screened for degradation of colloidal polyester polyurethane as a first step towards development of an enzyme-based paint stripping formula that is biodegradable and nontoxic. Because of a hydrophobic surface layer on the paint, bacteria/paint surface contact may not induce production of polyurethanes. Thus, constitutive polyurethane-degrading strains were generated by mutagenesis. Eight environmental isolates were recovered from paint chip samples from a Naval paint stripping facility. Restriction fragment length polymorphic analyses revealed that four of these isolates may be similar strains. Comparison of the strains by restriction mapping of the hypervariable regions of the 16S rRNA showed two distinct groups. A representative strain from each

group was mutagenized by transposition with mini-Tn5 and screened for ability to degrade polyester polyurethane on culture plates. Of 8,000 mutants screened, 10 produced much larger zones of clearing than the wild-type strain. These strains were further examined for their ability to degrade the matrix of the aircraft paint.

**Dr. Harold T. Stokes**

Professor

Department of Physics and Astronomy

Brigham Young University

Provo, UT

**Host Laboratory: Naval Research Laboratory**

**Tenure Period: September 1993 to July 1994**

**Research Plan**

Prof. Stokes has been involved in a research effort in applying group theoretical methods to phase transitions in crystalline solids. He has developed computer software for analyzing possible symmetry changes in crystals. He proposes working with the Complex Systems Theory Branch at NRL and learning how to apply his techniques to the types of structural problems being studied at NRL.

**Dr. Dan Landis**

Professor/Director

Center for Applied Research and Evaluation

University of Mississippi

Oxford, MS

**Host Laboratory: Defense Equal Opportunity Management Institute**

**Tenure Period: August 1994 to May 1995**

**Research Plan**

To develop an equal opportunity training device on the Intercultural Sensitizer (ICS). The ICS is a computer based programmed instruction method of imparting and reinforcing cultural information. Each ICS "item" consists of a short vignette, a question about the motivation of one of the actors in the vignette, four possible explanations of that behavior - one of which is culturally appropriate - and the rationales for the "correctness" or "incorrectness" of each of the explanations. The aim of the research is to develop at least 200 items covering a variety of issues (e.g., racial and sex discrimination, sexual and racial harassment, reverse discrimination, etc...). A design for validation will be developed and, if time and funds permit, implemented.

Additionally, the research will also focus on the putative effects of race on incarcerations in the military justice system. Part of the work will be focused on examining possible predisposing factors in the recruit that might make him or her more liable to become entangled in the military justice system. If these predisposing factors can be identified with any degree of reliability and validity, then a program of training can be developed which would divert these recruits from the justice system.

**Dr. James Howard Edgar**

Associate Professor  
Department of Chemical Engineering  
Kansas State University  
Manhattan, KS

**Host Laboratory: Naval Research Laboratory**

Tenure Period: August 1994 to May 1995

**Research Plan**

To investigate the ECR plasma environment in both deposition and etching processes with optical diagnostic techniques and mass spectroscopy techniques. The etching environment will include chlorine-argon gas mixtures and gallium arsenide substrates. the deposition environment will involve various boron and nitrogen precursors for the deposition of boron nitride films on silicon substrates. The optical diagnostic techniques will be centered on infrared absorption spectroscopy with possible examinations of FTIR and Raman scattering spectroscopy. Chemical species can be identified by both absorption and FTIR spectroscopy, while the Raman technique can also provide information about the plasma temperature. All of these techniques will be spatially resolved so that the bulk plasma environment can be differentiated from that near the substrate where reactant/product information can infer the etch/deposition surface reactions. In addition, and to further understand bulk plasma and plasma/surface chemistry, mass spectroscopic techniques will be developed and employed to sample the gas phase in the bulk and near the substrate. Finally, plasma-assisted chemical vapor deposition of cubic boron nitride films in the ECR source will be investigated, with particular emphasis place on the film quality. This will require material characterization to determine the film's stoichiometry, crystal structure, chemical bonding, and electrical properties.

**Dr. Constantine Katsinis**

Associate Professor  
Department of Electrical & Computer Engineering  
University of Alabama at Huntsville  
Huntsville, AL

**Host Laboratory: Naval Air Warfare Center-Aircraft Division**

Tenure Period: September 1994 to December 1994

### Research Plan

To work with the Navy Next Generation Computer Resources (NGCR) High Speed Data Transfer Network (HSDTN) group. This research will concentrate in the development of enhancement of the Scalable Coherent in the areas of harsh environments, reliability, real-time usage and system integration.

### **Summary of Sabbatical Leave Program Participants to begin Tenure in 1995**

#### **Dr. John Wallace Grant**

Associate Professor

Department of Engineering Science & Mechanics

Virginia Polytechnic Institute and State University

Blacksburg, VA

**Host Laboratory: Naval Aerospace Medical Research Laboratory**

**Period: January 1995 to December 1995**

### Research Plan

To continue mathematical modeling of the mechanical motion sensing portion of the inner ear, incorporating recent findings about structure and the neural transduction process associated with this human sensory function. The project involves psychophysiology experiments with human subjects to validate and further develop the modeling effort. The resulting model will be used to understand and predict how pilots and astronauts react in abnormal motion environments. The Naval Aerospace Medical Research Laboratory in Pensacola, Florida is the leading research laboratory in this field.

#### **Dr. Mohammed Arozullah**

Professor

Department of Electrical Engineering

The Catholic University of America

Washington, DC

**Host Laboratory: Naval Research Laboratory**

**Period: January 1995 to December 1995**

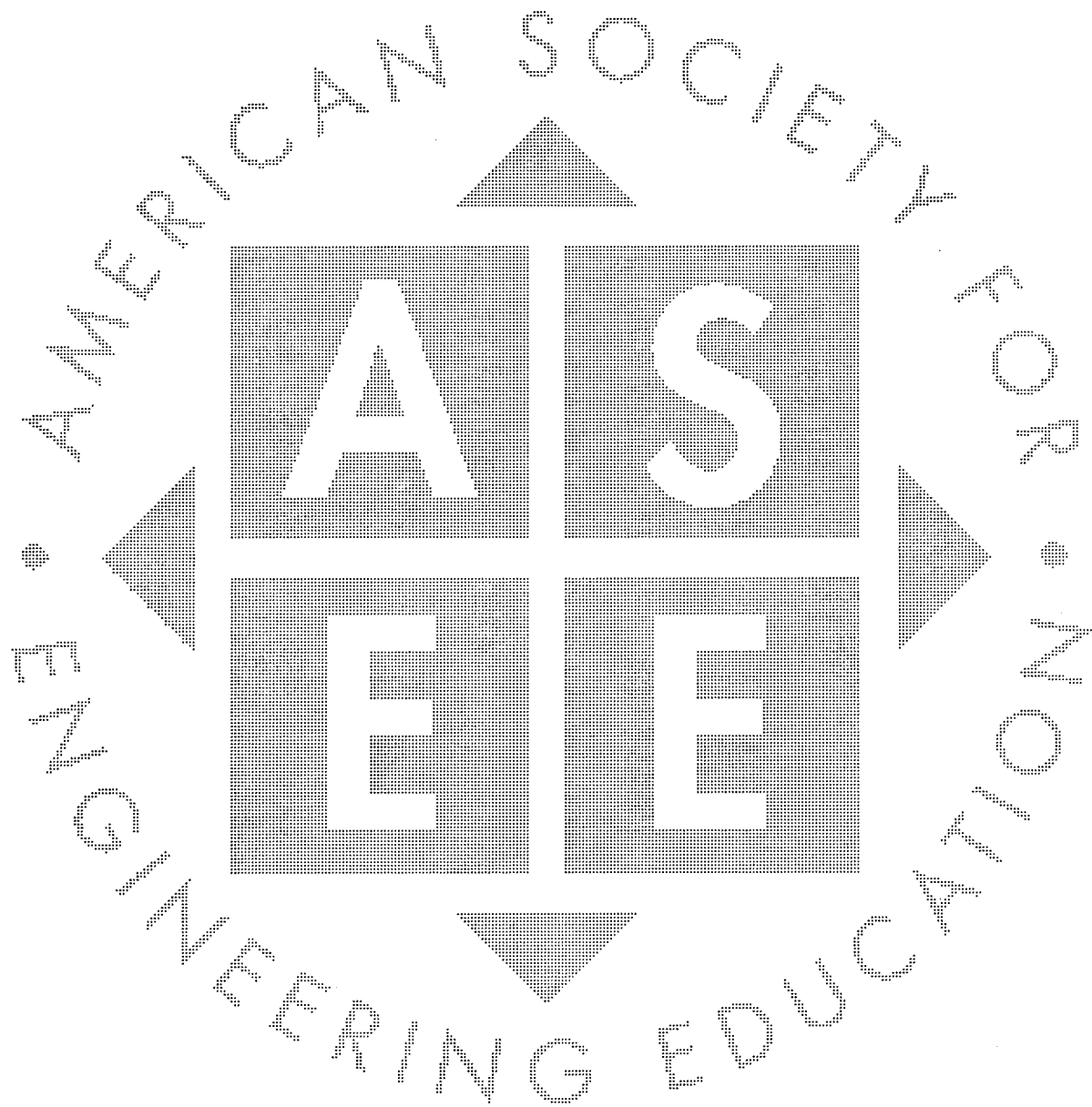
### Research Plan

To identify potential Multicast Routing Protocols (MRP) that are both scalable and dynamic. Scalability is necessary for the protocol to work efficiently as the size of the network increases. The size of a network may include the number of packets transmitted, the number of hosts in the multicast group, the number of groups in the network and the number of hosts joining or leaving a multicast group at any time. The protocol needs to be dynamic as it determines how rapidly hosts can join or leave a multicast group. This capacity is needed to



reduce bandwidth requirement, especially in the LANs and tail circuits of a large scale Distributed Interactive Simulation.

# ATTACHMENT O



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# REPORT DOCUMENTATION PAGE

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